

CIO

BIG DATA TREATS HIGH COSTS

Analytics cut prescription spending 15

SOCIAL MEDIA AT 35,000 FEET

Airline caters to social influencers 24

DEVICE POLICIES LURE MILLENNIALS

Don't alienate the Gen Y workforce 26

CATCHING THE BOARD'S EAR

How to tell IT's story to directors 50

CEO Ambitions

CIOs who won the CEO job talk candidly about the relentless pressure for profits, the ultimate accountability and what they wish they'd known as CIO 38

BY KIM S. NASH

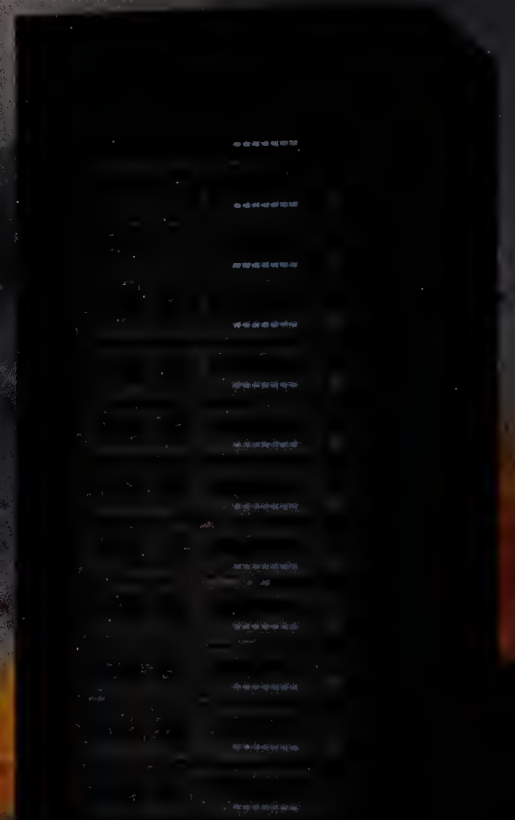


See how HP & NASCAR drive social media.
Powerful new connections across all forms of media.



See page
2

IS YOUR NETWORK IN NEED OF A RESCUE?



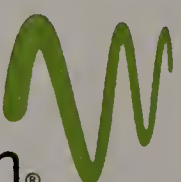
data. voice. network. cloud.
windstream.com/onit | 855.276.6438



**WE'RE
ON IT.**

ENTERPRISE HOSTING SOLUTIONS.

Part of Windstream's
Managed Services portfolio.

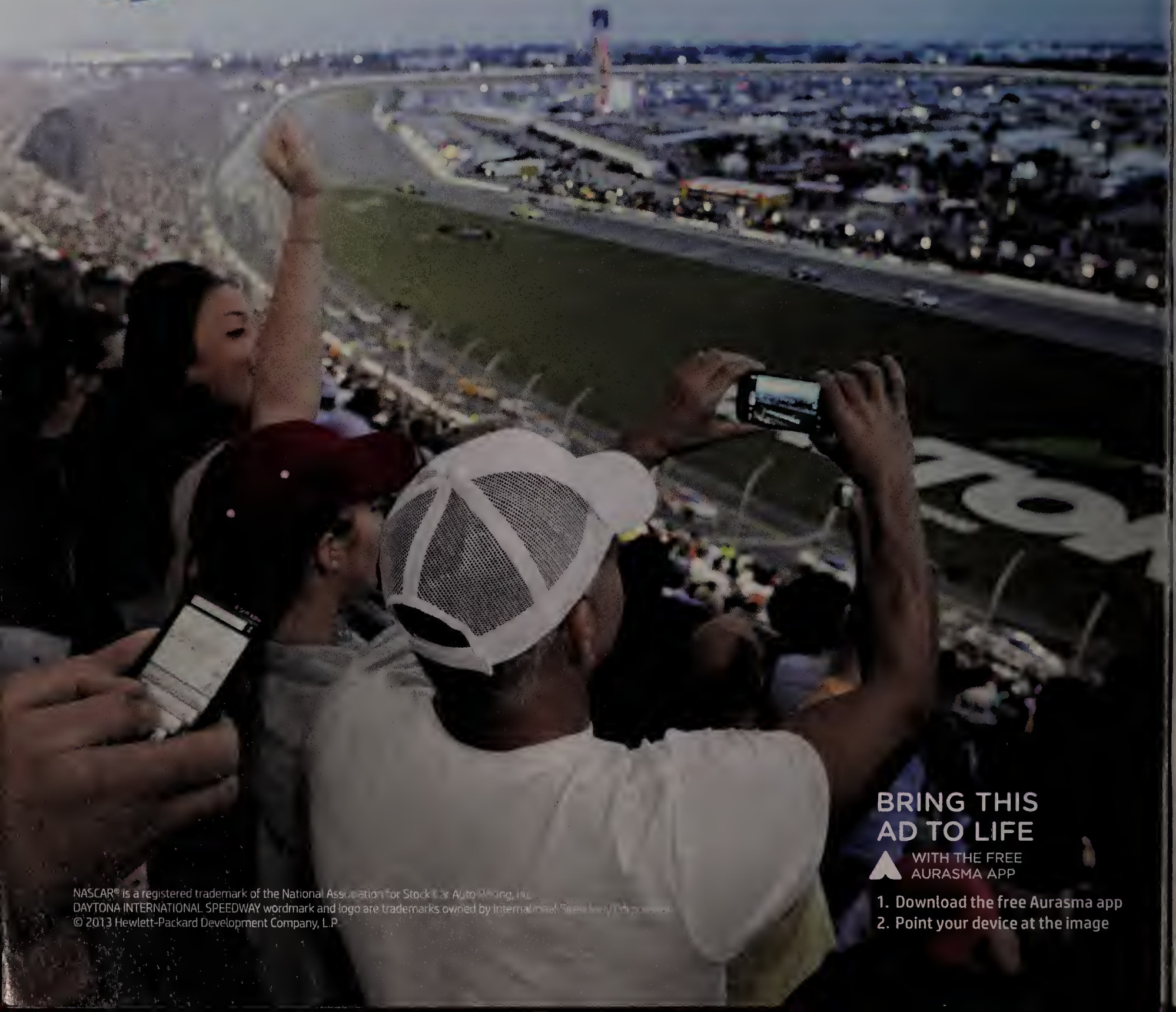
windstream® 
smart solutions. personalized service.

HP helps NASCAR drive social media. Hear the roar.

It's time to build a better enterprise. Together. While most businesses were just discovering social media, NASCAR® and HP took the lead. Together they created the NASCAR Fan and Media Engagement Center, which harnesses the power of big data with HP Autonomy to analyze all kinds of media—millions of tweets and posts, plus print, television, and video. HP Enterprise Services helped NASCAR connect with millions of fans and build brands across the whole NASCAR ecosystem—all in real time. So on race day, everybody wins. Building business by building new connections, it matters. hp.com/nascar



Make it matter.



**BRING THIS
AD TO LIFE**



WITH THE FREE
AURASMA APP

1. Download the free Aurasma app
2. Point your device at the image

NASCAR® is a registered trademark of the National Association for Stock Car Auto Racing, Inc.
DAYTONA INTERNATIONAL SPEEDWAY wordmark and logo are trademarks owned by International Speedway Corporation.
© 2013 Hewlett-Packard Development Company, L.P.

Start

From the Editor in Chief **4**
 Chatter **4**
 From the CEO **6**
 World View **8**
 Quick Fix **10**
 News Scan **12**



4



15

Grow

INNOVATION & BUSINESS VALUE

Analytics find ways to cut prescription costs **15**
 New Staples lab generates ideas **16**
 Jeweler puts an electronic ring around stores **18**
 Balancing flexibility and standardization **20**
 How one CIO runs smoothly in every gear **22**

Run

LEADERSHIP & OPERATIONAL EXCELLENCE

Virgin America woos social stars on the fly **24**
 Lure millennials with BYOD policies **26**
 Who owns an ex-employee's Twitter account? **28**
 Look for more women in higher ed C-suites **28**
 Brain bust looms as boomers hit retirement **30**
 EMC jumps into flash storage market **32**
 How to get many contractors to play nice **34**
 HR systems move to hosted solutions **36**
 Backing up one cloud with another **36**



24



50

Connect

PEER ADVICE

How to talk so the board will listen **50**
 IT's real value is in its ability to innovate **54**
 A healthcare CEO uses technology to empower doctors and improve patient care **56**



60

FinishIndex **58**

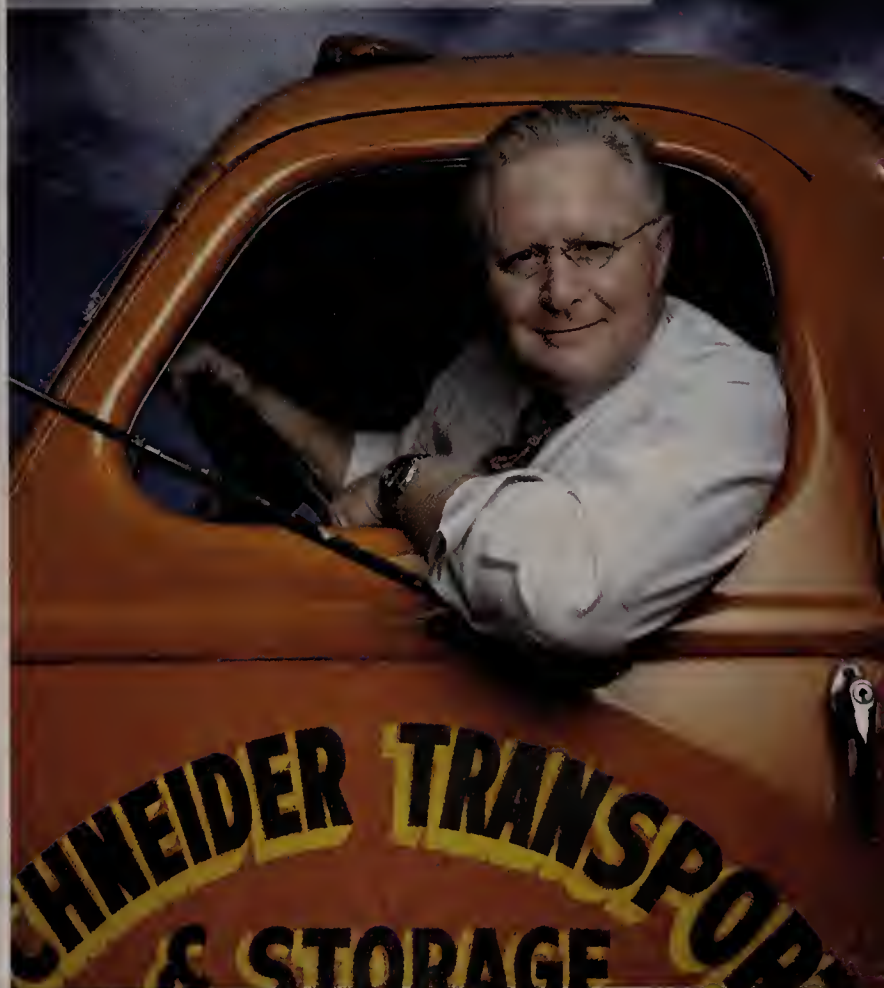
Smartphones make grading tests as simple as A, B, C **60**

CEO Ambitions 38

COVER STORY CIOs who won the CEO job talk candidly about the relentless pressure for profits, the ultimate accountability and what they wish they'd known as CIO

BY KIM S. NASH

Chris Lofgren likes the breadth of issues he faces as CEO of Schneider National, a trucking and logistics company. But he misses being a CIO, "the most fun job in my career."





FROM THE
EDITOR IN CHIEF

start

Corner Office Envy

Last spring at our CIO Perspectives New York conference, I watched the former CIO of Alcoa wow a room full of IT leaders with a candid, critical self-assessment of his first year as the new CEO of Mastech, an IT staffing company. The insights that Kevin Horner shared that day sparked the idea behind "CEO Ambitions" (Page 38), this month's highly instructive cover story about CIOs who make the still-relatively-rare career leap to CEO.

Only 4 percent of the CEOs of the world's biggest companies are former CIOs, reports Managing Editor Kim S. Nash, yet some 42 percent of CIOs (according to one industry survey) say they have the skills to become a CEO. That's a lot of corner-office envy.

"I was a pretty good CIO, and still there's a bunch of stuff I was just absolutely missing," Horner said. In retrospect, for example, he wishes he had delegated more of the typical day-to-day CIO duties so he could spend a lot more time with customers.

Other former CIOs who now lead companies shared their own lists of mission-critical CEO skills, such as the need for "relentless storytelling" to keep the company's vision sharp, or rock-solid confidence in your decision-making capabilities.

Mansfield Oil President Doug Haugh advises CIOs to gain vital business experience by running a P&L, serving as a startup adviser or finding a seat on an external board of directors. "Even if it's small-scale, it's so valuable," says the former CIO.

What often works against CIOs, career experts say, is having an internal focus rather than an external one. CEOs spend a lot of time thinking strategically about the future, the competition, the economy and the state of the outside world. CIOs, on the other hand, are more likely to be excelling at their day jobs, concentrating on how systems and data are aligning with business needs.

Yet even so, there is great value in having a CIO's "helicopter view" of the entire business, so many more of you could be destined for the corner office.

Not surprisingly, the biggest factor in becoming a CEO may be the sheer strength of desire for the job. Former Harrah's Entertainment CIO John Boushy decided early on that he wanted to be a CEO, which he achieved at Ameristar Casinos, between 2006 and 2008.

"Things didn't just happen to me," he points out. "I managed them to happen to me."

Maryfran Johnson, Editor in Chief, CIO Magazine & Events
mfjohnson@cio.com

CHATTER

Can Big Data Save Lives?

The Durkheim Project, funded by the Defense Advanced Research Projects Agency, is seeking to show that **predictive analytics** can identify veterans of the Iraq and Afghanistan wars who are suicidal and need help. Working with Facebook, Twitter and LinkedIn, researchers are creating a **database of social media and mobile phone data** from veterans who volunteer to participate. The goal is to apply text-mining technology to look for patterns of suicidal behavior in the messages. Researchers hope to eventually provide clinicians with **real-time assessments** of psychological risk factors for suicide. www.cio.com/article/738890

New Wave of Offshoring

About **1.5 million IT jobs** in the U.S. and Europe **will be eliminated by 2017** due to a combination of offshoring, technology-driven productivity improvements and a **low-growth business environment**, according to a report from The Hackett Group. The hardest-hit positions will be application maintenance and development and infrastructure support, which may remain offshore indefinitely. The cause of the offshoring rise: the **growth of global business services**, a shared services approach that many companies have embraced because of its **cost and productivity benefits**. www.cio.com/article/738955

Correction

The Sept. 1 story "Patriots Deploy Stadium Wi-Fi" should have said the Wi-Fi network was fully deployed last year and has enough bandwidth for almost all of the fans in the stadium, depending on their network activity. www.cio.com/article/738515

Compiled by Staff Writer Lauren Brousell. Have a comment about a story in this issue? Go to www.cio.com/issue/20131001 or write to letters@cio.com.



AppExchange Program
PARTNER

CONGRATULATIONS SALESFORCE USERS

A NEW BUTTON IS BORN



Advanced Scheduling and Mobility in One Click

Two leaders join forces, the result: a powerful new green button to optimize your mobile workforce. Built on the Salesforce Platform and available on the AppExchange, ClickWorkforce enables optimized scheduling and mobility of your mobile workforce while providing superior customer service in the cloud.

How powerful is the green button?

View our exclusive demo at: clicksoftware.com/clickworkforce-cio-us



ClickSoftware

Making Service Click



FROM THE **CEO**

An Epic Transition

Maybe the Mayans were on to something after all. Not that the whole world would come to an end in 2012, but rather that the tech world of the past 20-25 years would unravel before our eyes. Look at recent developments in enterprise tech and tell me that these aren't cataclysmic events:

- Gartner says second-quarter server revenue declined 3.8 percent from the year-earlier period. IDC puts the drop at 6.2 percent.

- Cisco plans to lay off more than 4,000 people next year. CEO John Chambers, speaking at the North Carolina CEO Summit, said that laying off 5 percent of the company's workforce is necessary because Cisco needs to race to keep up with changes in the technology market. "[W]e have to transition in this inconsistent market," he said. "If I did it the old-world way, our company would miss these opportunities and we would become roadkill." Chambers said that he expects one in three tech companies "won't exist in a meaningful way" in just a few years because buyers are adopting technologies like mobile, virtualization and software-defined networking.

- HP says revenue dropped more than 8 percent in the third quarter of its fiscal year due to problems in PCs, servers and other businesses.

- Microsoft CEO Steve Ballmer plans to resign in the next 12 months.

But, as we well know, the circle of life exists for technology, too. As one computing era ends, another is just beginning. IDC calls it the "third platform," and it consists of IT architectures that leverage mobile devices, cloud services, social technologies and big data analytics. If you don't think this change is real, then look at recent news in the cloud market alone:

- Amazon Web Services (AWS) continued its heady growth—at least according to what can be gleaned from Amazon's second-quarter earnings report. The "other" North America category, where AWS is lumped in with some other businesses, hit \$844 million, up 64 percent from \$515 million a year ago.

- Box, a cloud storage company, claims to have 180,000 business customers and expects 100 percent revenue growth this year.

- ServiceNow, a cloud-based software vendor, has posted revenue growth of at least 80 percent year over year for 28 consecutive quarters.

I think Chambers captured the sense of urgency when he said: "We don't compete against competitors, we compete against market transitions." Well, this market transition is one for the ages. Welcome to the third platform.

Michael Friedenber, President and CEO
mfriedenberg@cio.com



BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenber
GROUP PUBLISHER Bob Melk
PUBLISHER Adam Dennison
PUBLISHER EMERITUS Gary J. Beach
CHIEF CONTENT OFFICER John Gallant

EDITORIAL

EDITOR IN CHIEF

Maryfran Johnson

EXECUTIVE EDITOR

Mitch Betts

MANAGING EDITOR

Kim S. Nash

SENIOR EDITOR, COPY AND PRODUCTION

Colleen Barry

STAFF WRITER

Lauren Brousell

CONTRIBUTORS

Mary Brandel, Baron Concors, June Drewry, Jaime Eckle, Martha Heller, Stephen Lawson, Zach Miner, John Moore, Fred O'Connor, Stephanie Overby, Mary K. Pratt, Jennifer Lonoff Schiff, Madeline Weiss

CONTRIBUTING EDITORS

CIO EXECUTIVE COUNCIL

VICE PRESIDENT, EDITORIAL AND PROGRAMS

Rick Pastore

DIRECTOR OF STRATEGIC CONTENT

Tim Scannell

DESIGN

ART DIRECTOR

Terri Haas

ONLINE EDITORIAL

EDITORIAL DIRECTOR

Brian Carlson

EXECUTIVE EDITOR

Dan Muse

ONLINE MANAGING EDITOR

Rich Hein

SENIOR EDITORS

Brian Eastwood, Al Sacco

SENIOR ONLINE WRITERS

Tom Kaneshige, Thor Olavsrud

ASSOCIATE ONLINE EDITOR

Sheryl Hodge

STAFF WRITER

Sharon Florentine

RESEARCH

RESEARCH DIRECTOR

Carolyn Johnson



CXO MEDIA INC.

©CXO Media Inc.

INTERNATIONAL DATA GROUP

CHAIRMAN OF THE BOARD

Patrick J. McGovern

IDG COMMUNICATIONS, INC.

CEO

Bob Carrigan



CONTACT US

WHO COVERS WHAT www.cio.com/staff

EMAIL letters@cio.com

PHONE 508 872-0080



Planning a city's future is Kevin's business.
We're proud he's made it our business, too.

At Time Warner Cable Business Class, we listen to your needs, offer advice and deliver best-in-class solutions. That is why Kevin came to us. Together, we set up Dedicated Internet Access and Cloud Services to help him share files faster, videoconference easily and stay connected to his team. We helped Kevin bring his ideas to life. And we can do the same for you. To learn how, call us for a consultation today.

Ranked #1 in Customer Loyalty by

FROST & SULLIVAN

1.877.615.4332 | TWC.COM/BUSINESS

INTERNET | VOICE | TELEVISION | NETWORK SERVICES | CLOUD SERVICES

 **TIME WARNER CABLE**
Business Class®

Products and services not available in all areas. Actual speeds may vary. Some restrictions apply.
Time Warner Cable Business Class is a trademark of Time Warner Inc. Used under license.
©2013 Time Warner Cable Enterprises LLC. All Rights Reserved.

Wi-Fi Brings Internal Benefits to London's Tube

U.K. Having met last year's deadline to provide London Underground passengers with Wi-Fi in time for the Olympics, Transport for London (TfL) CIO Steve Townsend is now putting Wi-Fi to work for the organization.

With the Wi-Fi service live in 120 Tube stations, TfL is looking at ways it can use the new infrastructure in its own processes. The Wi-Fi system is already underpinning a number of projects, including data monitoring, so that trains and escalators can be fixed before they actually break. "As trains trundle around the Underground," says Townsend, "we're able to communicate with them in a way we've not been able to do before, picking up that data and sending it back to our maintenance teams."

TfL is also providing data to third-party app developers that provide passengers with real-time schedule updates. www.cio.co.uk

Earthquakes Don't Shake This CIO

NEW ZEALAND For Alma Hong, CIO at New Zealand Fire Service (NZFS), the importance of integrating technology into emergency response teams was highlighted when a 6.5-magnitude earthquake shook the country's capital in July.

The value of NZFS's technology team is in planning and preparedness. "It is about enabling the capture of information, providing awareness to the situation and its rapid assessment," Hong says. One way IT does that is by setting up Hazmat Command Vehicles that can be deployed very quickly in emergencies.

Hong urges IT teams to communicate regularly with colleagues before, during and after a crisis. "There should hardly be anything going on that we're not aware of." www.cio.co.nz

Overcoming Infrastructure

INDIA As Indian poultry giant Venkateshwara Hatcheries outgrew its home-grown IT system, the IT team looked to bring in new technology, finally choosing open-source ERP system Openbravo.

Venky's, as it is known, wanted the flexibility of customization, needing to cope with the infrastructure limitations of the remote areas it's expanding into. It has since developed apps for placing purchase orders and for keeping poor Internet connectivity from interrupting work. www.cio.in

IT Keeps Shipbuilder Afloat as It Becomes More Global

NETHERLANDS At shipbuilder IHC Merwede, CIO Jan van de Wouw looks to technology to out-innovate the competition. For example, a new data center has sped up calculations used in the design process—what used to take a week now takes mere hours, he says. As the company becomes more international, van de Wouw wants to foster collaboration between employees around the world. Microsoft Lync helps by cutting down on face-to-face meetings and saving money.

Next up is the One IHC Merwede program, which will include global ERP, CRM and product lifecycle management systems. Van de Wouw stresses that the company sees this not as a new IT project, but as a reflection of a broader management commitment to enabling teams to work together across international borders. <http://cio.nl>

—Compiled by IDG News Service from CIO magazine affiliates worldwide



THE VOLUME OF BUSINESS DATA WORLDWIDE IS EXPECTED TO DOUBLE EVERY 1.2 YEARS.

Be ready with the storage that's ready for the future.

The world of data is getting bigger by the day. That's why for 25 years, SanDisk has pushed the boundaries of what's possible in storage. The result is more than leading-edge storage. It's peace of mind, even in the most challenging environments. sandisk.com

Vetting Consultants

Tips for determining whether an IT consultant will be a good fit for your project

1 Ensure the consultant has experience in your size and type of business. One who typically works with Fortune 500 companies will have trouble serving a smaller business, and a consultant with a finance background may not have the experience needed for, say, a manufacturer.

2 Find out whether the consultant is affiliated with IT vendors. Do they get a commission or referral fee, or resell a vendor's products? If so, you may not get unbiased advice.

3 Look for good communication skills. Is the consultant equally comfortable talking about technology and business benefits?

—Jennifer Lonoff Schiff



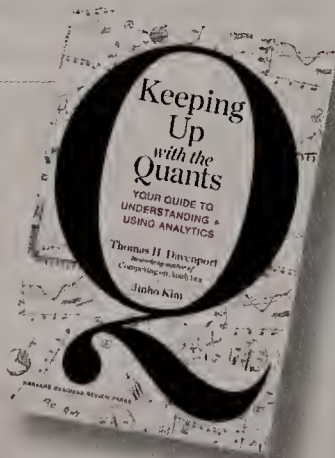
For more tips, see: www.cio.com/article/737242



WORTH READING

BOOK Keeping Up with the Quants
By Thomas H. Davenport and Jinho Kim

Big data analytics can be scary if you're not a math whiz. But this guide to "analytical literacy" will help business execs gain confidence when communicating with hotshot data scientists. You'll learn how to frame the problem, question assumptions and push back when you don't understand. *Harvard Business Review Press, \$27*



quick FIX



How can CIOs better communicate with millennials?

ALWAYS give millennials accountability structures so they know what you expect of them, what the success metrics are, and how you will track their performance. Millennials thrive in a high-transparency culture where it's clear what each member of the team accomplishes. This promotes a feeling of fairness, which further engages millennials.

SOMETIMES you'll need to give difficult feedback. Begin with a supportive, collaborative approach. State observable data and behavior ("Here's what I saw or heard," or "The deadline was missed"), then describe how what happened affected you and the team. Ask, "Is this what you think happened?" The idea is to get their perception and listen to and acknowledge their point of view—you don't have to agree. Next, ask for or make suggestions about how to resolve the issue. Describe what you want in terms of specific behaviors. Don't say, "You need to be friendlier to disgruntled customers." Instead, give examples of words to say or actions they can take when an interaction turns tense or confrontational. Get acknowledgement by saying, "What did you hear me say to you? I just want to be sure you understand." Finally, build small agreements. What is the millennial's plan for changing their behavior? How will you monitor your agreements? Remember, vagueness creates anxiety. Specificity brings peace of mind.

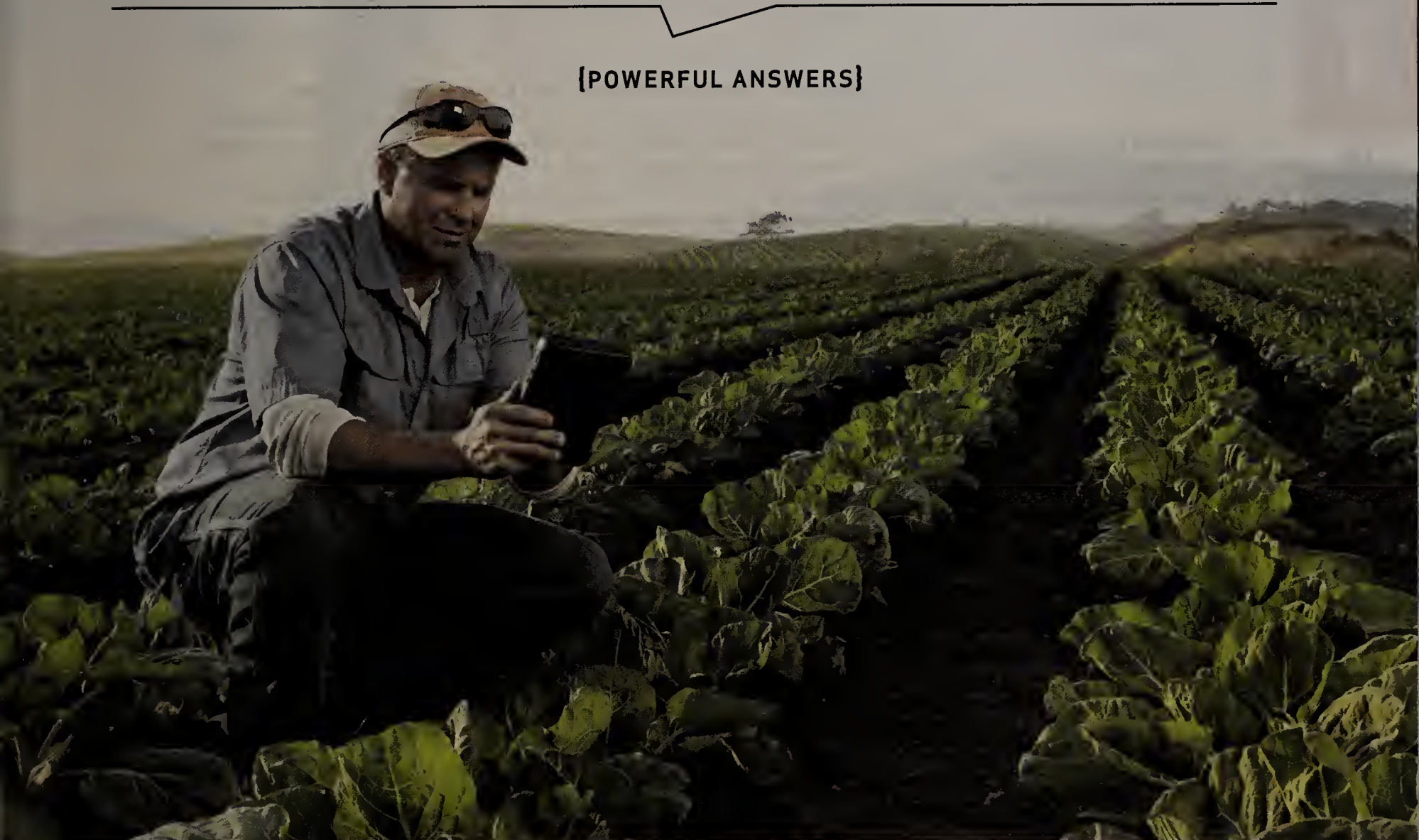
NEVER miss an opportunity to inquire versus give orders. Asking questions enables millennials to solve their own problems, find solutions and rise up as leaders.

Christine Comaford is a neuroscience-based leadership and culture coach who helps executives navigate growth and change.



CLOUD SERVICES HELP *IMPROVE PRODUCTION.* AND THAT HELPS **FEED THE PLANET.**

{POWERFUL ANSWERS}

A man wearing a cap and sunglasses is kneeling in a field of large-leafed plants, holding a tablet and looking at the screen. The background shows a vast agricultural landscape under a cloudy sky.

Responding to a dynamic environment with scalable cloud technology. Advances in technology allow agricultural operations to improve production by accessing a wide range of information from soil and climate data to supply-chain logistics. Verizon Terremark Cloud delivers a portfolio of services to securely and cost-effectively add scalable computing power so that companies can adjust to the ups and downs of business. These cloud solutions are helping to make businesses more adaptive, quick and intelligent.

Because the world's biggest challenges deserve even bigger solutions.

Cloud solutions at verizon.com/dynamiccloud

NEWScan

Playing Favorites Is Trending on Twitter

The hot trend on Twitter is an option called favoriting, in which Twitter users mark a tweet they like with a star. The technique essentially bookmarks the tweet, and alerts the writer of your approval, but is more discreet than republishing the comment in your own Twitter stream.

Twitter users hit the favorite button 1.6 billion times this May—four times more than they did in May 2012, according to Topsy, a data-analytics company.

—The Wall Street Journal

UPS to Offer 3-D Printing Service

The UPS Store, a retail chain of the United Parcel Service, is planning to provide 3-D printing services at selected locations, starting with its San Diego store.

UPS is testing the Stratasys uPrint SE Plus printer. The in-store 3-D printer will enable startups, small businesses and other retail customers to produce engineering parts and architectural and functional prototypes without having to buy a printer.

—Atlanta Business Chronicle

Data Brokerage Opens Up to Consumers

Acxiom, a marketing technology company that has amassed a huge trove of data about American consumers, including household makeup, financial means, shopping preferences and leisure pursuits, is trying a new approach: openness.

The \$1.1 billion company unveiled a free website, called AbouttheData.com, where United States consumers can view some of the information the data brokerage has collected about them. Consumers can also suggest corrections of inaccurate data, learn the sources of the data nuggets or opt out of data collection.

The transparency campaign is an effort to build a direct relationship with consumers and to ward off possible government regulation. To log in to the Web database, consumers have to give up some information: first and last name, home address, date of birth, email address and the last four digits of their Social Security number.

—The New York Times

Gesture-Control Interface Gets Lukewarm Reviews

The hype surrounding the release of Leap Motion, an \$80 3-D gesture-control gadget, was intense. But early customer reviews of the product have been "meh," citing problems like difficulty controlling apps and tired arms.

Experts say it will take some time for app makers to build applications that work in three dimensions and have motion controls that users will understand how to use.

So far, there is no standard set of Leap Motion gestures, so actions like selecting or grabbing an on-screen item can vary from app to app, but Leap Motion is planning to standardize some interactions so they will become more consistent across applications.

—MIT Technology Review

Hackers Find Weaknesses in Car Computer Systems

Hackers have recently demonstrated that they can slam a car's brakes at freeway speeds, jerk the steering wheel and even shut down the engine—all from their laptop computers.

The hackers were white-hat computer security experts, and there have been no real-world cases of a hacker remotely taking over a car. But experts say high-tech hijackings will get easier as automakers give cars full Internet access and add computer-controlled safety devices that take over driving duties, such as braking or steering, in emergencies. The most likely scenario is also the simplest: A tech-savvy thief could unlock the doors and drive off with the vehicle.

—Associated Press

Smart Sensors Have Huge Growth Potential

Sales of a new generation of intelligent sensors may rise about 10 percent a year to reach \$6.9 billion in 2018, according to Transparency Market Research. Unlike dumb predecessors that gathered data and passed it to a central server to analyze, these devices have internal processors that perform advanced calculations.

One researcher plans to deploy 7,500 iPhone-sized sensors to measure water levels in California—critical data for farmers and state planners. Another application of sensor networks aims to tell consumers where parking spaces become available, so cities can adjust parking fees based on demand. "It's smart cities, smart buildings, smart water," says Susan Eustis, president of WinterGreen Research. "It's enabling a world of things. It's going to grow unbelievably fast."

—Bloomberg News

Tablets Bring Their Own Ergonomic Problems

Experts say mobile gadgets are introducing new aches and pains. For example, many people place their tablets flat on their desks and read them as if they were books, says Alan Hedge, director of the Human Factors and Ergonomics Laboratory at Cornell University. That practice leads to hunching and chronic soreness of the back of the neck and upper shoulders—a syndrome called iPad Neck. Hedge recommends propping up the tablet or putting it on a holder so you can read it with a straight neck.

—Computerworld



Datawatch just changed the game on Tableau.

Variety. Velocity. Visualization.

In the Big Data and business analytics market, only Datawatch can offer the widest variety of data sources (structured, semi-structured and unstructured) in a real-time, high velocity environment using a rich and interactive visual discovery paradigm. Discover it for yourself.

Get the Whole Story™ at www.datawatch.com/discovery



IDG Research Uncovers the Successes, Challenges of ERP

IT AND BUSINESS EXECUTIVES SHARE THEIR VIEWS ON THE BENEFITS AND LIMITATIONS OF THEIR CURRENT ERP IMPLEMENTATIONS.



NEW IDG RESEARCH SERVICES SURVEY RESULTS indicate that enterprise resource planning (ERP) systems, while successful at meeting the core needs of organizations, still have a number of shortcomings that organizations struggle to address.

In a May 2013 survey of 149 organizations, a majority reported that their ERP systems meet the objectives of improving fiscal/regulatory accounting and reporting as well as improving accountability and compliance.

However, respondents also noted some shortcomings with ERP systems. While most enterprises are satisfied with the level of business visibility and user empowerment they achieve with their ERP systems, just 39 percent said these systems are sufficiently flexible and only 30 percent believe these systems are easy for end users to adopt.

In fact, while 76 percent of respondents said improving customer service was an important or somewhat important objective for implementing an ERP system, only 50 percent said their ERP system helped them achieve that goal.

Some companies report ERP systems can have rigid assumptions about the way work is done, and when the systems do not align with organizational needs, worker productivity suffers. Respondents indicated that ERP systems generally do not help them succeed in the areas of improving customer service, increasing operational efficiency and reducing operational risk.

Another shortcoming respondents noted was that ERP systems are difficult to extend to serve the fast-evolving

needs of users in such innovative areas as analytics, social network integration and collaboration.

Why are ERP systems successful in addressing some needs but not others? The built-in standardization of processes that provides a strong foundation for operational management makes ERP systems costly and difficult to change in areas that demand flexibility, such as customer service. As a result, gaps exist in the ability of ERP systems to serve functions that require a great deal of customization as well as functions that require agility to respond to changes in the business environment.

IT and business executives must take steps to close the gaps between ERP objectives and achievements. One of the best ways to do this is by using a business process management (BPM) system. A BPM system augments the core functionality of an ERP system by making it more flexible and easier for users to adopt.

A BPM system does not replace ERP systems. Rather, it integrates with and extends the core functionality of these platforms so they can be customized to serve new uses.

A BPM system can integrate the many complicated and inflexible screens of ERP systems into a single, customizable interface that has the flexibility to address the needs of different users, including employees, customers and business partners. As a result, users do not need to adapt their work to the system; the system adapts to them.

With better ease of use and greater flexibility, organizations can get even more value out of their ERP systems and close the execution gaps between their initial objectives and measures of success.

Learn more about the research results by downloading the full white paper **"ERP Challenges and Successes"** at: www.cio.com/whitepapers/pega_erp

Gary Wimberly, CIO of Express Scripts, says analytics save on prescription drug costs.



Big Data Treats High Costs

Express Scripts applies analytics to slash prescription spending and improve patient care **BY STEPHANIE OVERBY**

Managing the cost of prescription drugs is a challenge for many health plan providers. Americans spent \$325.8 billion on prescriptions last year. Historically, that spending has been mainly on treatments for common conditions like high cholesterol or diabetes. But high-cost specialty medications for chronic or rare conditions, like cancer or multiple sclerosis, are rising by up to 20 percent a year. They may account for more than half of all prescription costs by 2019.

Express Scripts, a \$93.9 billion company that manages prescription benefits for government agencies, companies and unions, wants to help customers reign in those costs—and, it says, improve patient outcomes. As the largest prescription benefits manager in the country, the 1.4 billion prescriptions it processes annually combine to produce 14 petabytes of data. Express Scripts feeds three of those petabytes into a Teradata analytics engine that helps physicians make effective prescription choices, says CIO Gary Wimberly. ▶▶▶

.....**54%** Millennials who turn to the Internet instead of TV, newspapers or magazines to get breaking news. Telefonica

crunch

►►► **Analytics** Continued from Page 15

Last year, the company launched an online portal called ExpressPath, and paired it with a proprietary claims processing engine that manages both pharmacy and major medical benefits. That's important: About half of all specialty drugs are processed under major medical insurance rather than under the patient's pharmacy benefit. These drugs are often administered in a clinical setting by a doctor, says Phil Walls, chief clinical and compliance officer of myMatrixx, another pharmacy benefit management service. "It looks like a medical bill as opposed to a prescription bill. This makes it difficult to track."

Wimberly says Express Scripts is trying to sort out this big-data problem. The ExpressPath portal provides real-time information on coverage and rules to assist in optimal prescription choices.

The portal uses Express Scripts' proprietary rules for crunching pharmaceutical manufacturer's guidance, claim adjudication data, clinical standards and prior authorization rules.

ExpressPath then offers advice to doctors, such as recommending a more cost-effective or clinically appropriate drug, or identifying a lower-cost clinic that can provide recurring treatment. One health insurance provider, for example, saved \$45,000—and its patient avoided extra treatment—when the portal noted that a drug had been prescribed for too long.

Customers save between 10 percent and 15 percent on medication claims filed under the medical benefit, says Wimberly. He declines to say how much the company spent or has made on the portal, but says it's a growing source of revenue for Express Scripts. A nationwide rollout is planned in early 2014.

Building ExpressPath, which took four years, was "extremely challenging," he says, because it has to analyze complex data in real time and deliver concise information to individual healthcare professionals. The value, he says, is that it can help with decisions that can save money and improve care.

"That kind of tool didn't exist anywhere else in the marketplace," Wimberly says.

"That kind of tool didn't exist anywhere else."

—Gary Wimberly, CIO, Express Scripts

Fortune 500 Bullish on Social Media

Three-quarters of Fortune 500 companies have active **Twitter** accounts and 70 percent have a **Facebook** page

Fortune 500 companies with the most Twitter followers:

➤ Facebook	8,629,741
➤ Google	5,965,743
➤ Starbucks	3,813,472
➤ Whole Foods Market	3,381,926
➤ Walt Disney	1,757,871

SOURCE: CENTER FOR MARKETING RESEARCH, UNIVERSITY OF MASSACHUSETTS DARTMOUTH, 2013

Staples Lab Delivers Innovation

Staples, the \$24 billion office-supply retailer, is relying on its new Velocity Lab to develop omnichannel technologies that will help it retain a competitive edge.

For example, in August, the lab rolled out Staples' new mobile website, with an improved design and integration with the Staples rewards program.

Velocity Lab, which opened in December, acts like a startup and draws on expertise from organizations such as MIT and Oracle, says Prat Vemana, director of the lab.

The Staples lab also developed an in-store kiosk so customers can get help from an associate or start a video chat with a call center. The customer can enter their rewards card number to see past purchases, for example, or look up the type of printer ink they need. Purchases can be paid for at the kiosk or at the checkout counter.

Developers are now working on software that lets customers with Android phones connect to the in-store kiosk through the cloud so they can view and shop from the list of favorite products they've tagged in the Staples mobile app.

—Lauren Brousell

.....**70%** Employees who say the most meaningful recognition they get at work has no dollar value. Badgeville



SEAMLESS CLOUD FOR THE WORLD

NTT Communications provides global enterprises with a broad suite of Information and Communication Technology (ICT) services—all powered by more than 140 data centers worldwide with network coverage in 160 countries/regions.

Our Software-Defined Networking based comprehensive cloud services, make your migration process simple, and help you optimize your ICT environment quickly and safely.

We'll keep your speed up and your costs down so you can focus on growing your business.

Expand your business globally. **Go to ntt.com**



Recognized as "Wholesale Operator of The Year"
at Asia Communication Awards 2013.



Recognized as "The Best Asian Telecom Carrier" and
"Best Cloud-Based Service" at Telecom Asia Awards 2013



Global ICT Partner
Innovative. Reliable. Seamless.



Ryan Bonifacino, VP of digital strategy at retailer Alex and Ani

ALEX AND ANI

Jewelry Chain Tests Geofencing

BY STEPHANIE OVERBY

THE PROJECT :: Pilot an in-store mobile marketing platform at jewelry retailer Alex and Ani.

THE BUSINESS CASE :: Alex and Ani, best known for its single-charm bangle bracelets, operates 36 physical stores, an 1,860-account wholesale business, and—most recently—an online store. “We have large ambitions to do multichannel the right way,” says Ryan Bonifacino, the company’s vice president of digital strategy. But the company credits its repeat purchase rate of 50 to 60 percent (customers collect the bracelets “like Beanie Babies,” says Bonifacino) in large part to its high-touch in-store experience. The company piloted Swirl, a smartphone app that delivers deals and information to customers when they are near a store, to better understand point-of-sale behavior and make use of that online. Alex and Ani’s visibility within the app could also expose the brand to a new audience.

FIRST STEPS :: Bonifacino piloted the app at the Boston store (because it’s a good indicator for the rest of New England) and the New York store (because it’s the fastest-growing). Swirl installed Oreo-sized sensors that detect customers with the mobile app; alpha testing took place from May to July. “Once back-to-school [season] hits, we don’t come up for air until Mother’s Day,” says Bonifacino. “The only time we have to plan and test is summer.” When a Swirl app user nears the Newbury Street or Soho stores, a timed deal pops up. Alex and Ani generally does little discounting, says Bonifacino, because demand tends to outpace supply, so the company offered its normal “bangle of the month” deal. Typically the in-store offer is \$5 off; on Swirl, it’s a 20 percent discount—a slightly better rate.

There was little training required for store associates

other than learning to enter the discount source and code in Alex and Ani’s homegrown point-of-sale system. After three months, Alex and Ani’s Swirl results outperformed those of other retailers on all counts. Users spent 12-15 minutes in the store, 84 percent saw the mobile offer, and 32 percent redeemed the offer. A beta test, incorporating lessons learned, starts in the fall. One of the lessons: Customers weren’t thrilled about getting the same deal as everyone else. They like exclusivity, so Bonifacino is working with Swirl to identify high-value customers and create better offers just for them. He’d also like Swirl to figure out how to retarget users who saw the offer but didn’t redeem it.

The biggest concern is whether Swirl can continue to bring in new customers at the rate that Alex and Ani is doing so organically; the retailer has grown from \$4.5 million in sales in 2010 to a projected \$160 million this year. “We’re adding a couple thousand customers every week. If they’re not adding that, it becomes less attractive,” says Bonifacino. “[But] if it’s something that can truly scale, we’ll open it up regionally to a dozen more stores.”

WHAT TO WATCH OUT FOR :: Don’t be too quick to credit the success of a digital marketing endeavor to the new technology when you’re the one offering the discount. “I always like to ask the vendor what kind of business they could drive on their own if we weren’t offering anything,” says Bonifacino.

Although the pilot often costs very little, the time and effort involved is valuable. Be rigorous when researching startup vendors. “We have a venture capital mind-set, and we look at it like an investment,” says Bonifacino.

Stephanie Overby is a freelance writer based in Massachusetts.

..... **33%** North American retailers that have no plans to implement mobile point-of-sale devices in the next three years. IHL Group



IT'S YOUR DAY. CREATE SOMETHING POWERFUL.

Where could you take your business if you had fewer daily distractions? It's time to find out. With CenturyLink as your trusted technology partner, you get access to a global broadband network, custom communications solutions and a visionary cloud infrastructure with data centers around the world – freeing you to innovate and grow your business into something even more successful.

centurylink.com/link

Data • Voice • Cloud • Managed Services



CenturyLink®
Business

Your link to what's next™

Finding the Global/Local Balance

Tension between global IT standardization and local flexibility is inevitable. Here's how to find the right mix. **BY MADELINE WEISS AND JUNE DREWRY**

One of the most vexing challenges for CIOs is finding the right balance between enforcing global IT standards (for efficiency) and allowing far-flung business units some flexibility to match IT to local business needs. But after an arduous journey, Nestle, the world's largest food company, has achieved a balance that has been successful for its business, according to research by Michael Wade.

Wade, a professor at the IMD business school in Switzerland, shared Nestle's experience with the Society for Information Management's Advanced Practices Council. The familiar story begins with duplicated processes and costly systems that inhibited sharing of information and best practices. As one Nestle exec put it: "We had 10 definitions of 'sugar' in Switzerland alone. There was very little global standardization of data, systems or processes."

To increase global efficiency, Nestle began an SAP installation—the world's largest at the time. There were 15,000 processes to reconcile, and the project encountered lots of resistance. But Nestle's CEO continued to push for standardization, and gradually the cost savings and benefits became clear. In two years, the percentage of Nestle business units using standardized processes jumped from 30 percent to 80 percent. Among other benefits, standardization made it easier to integrate acquired companies.

Although Nestle initially planned to standardize 95 percent of its processes and systems, it ultimately decided to allow more flexibility. Process owners can make a business case for a local (non-standardized) process.

Wade says the following practices helped Nestle and other firms achieve the right balance:

Adapt processes first. Executives often pressure CIOs to move too quickly into system-implementation mode without changing processes, hoping that new systems will force the issue with resistant business-unit heads.

For example, a large shipping company lost patience with an SAP implementation and overlaid the software on top of existing processes. Seven years later, the project shows few gains and the company is considering starting over.

Pick smart pilots. The goal is to test concepts and build credibility. An ideal pilot program is medium-sized—not so large that problems are super-visible or will hurt organizational performance, but not so small that it's considered an unrealistic test for other units.

Get top management support. According to a Nestle executive, "The CEO's sponsorship was the number one success factor. He clearly stated that the project would be his legacy. This sponsorship provided the essential push to get the project off the ground."

Build strong governance. Create mechanisms for figuring out which processes and systems become the global

standard, how to authorize exceptions, and which processes or systems will be discontinued.

Start with back-office processes. Then move to manufacturing, operations and supply-chain functions, where the benefits of efficiency are high. Finally, tackle market-facing functions such as marketing and sales, which tend to resist standardization and support local flexibility—probably for good reason.

In a world where there's likely to be strong resistance to any centrally led initiative, you'll need a strong, strategic rationale behind each standardization request. Nestle's CEO recognized that balancing local flexibility with global efficiency was pivotal to future growth and success. As chief IT strategists, CIOs play a crucial role in helping their firms create that balance.

Madeline Weiss is director of the Society for Information Management's Advanced Practices Council (APC). June Drewry is former CIO of Chubb and an adviser to the APC.



Drive at the speed of light, Solid State Drive.

Upgrade now and enjoy a brand-new computing life with the proven reliability of Samsung SSD 840 EVO and 840 PRO. Speed limit not enforced. www.samsung.com/ssd

SAMSUNG

Shifting Gears at Delphi Automotive

The auto parts company's CIO helps it emerge from bankruptcy and switch from extreme cost-cutting to an intense focus on business growth **BY JOHN GALLANT**

Tim McCabe has been through it all. He joined Delphi Automotive in 2006 and became CIO in 2009, and in the years he's led technology at the auto parts maker, Delphi has stumbled financially, plunged into bankruptcy, reorganized and streamlined, gotten back on a growth track and re-emerged as a public company. The IT team cut costs drastically, then shifted gears to enable global expansion and the "Safe, Green and Connected" initiative that's fueling Delphi's success.



Our clients are starting to say: If I give you a dollar, can you generate \$1.50 in value?

The company has been through an awful lot in the past decade. How has your team helped Delphi make that turnaround?

We found ourselves emerging from bankruptcy in 2009. We saw some pretty fast growth. And the IT team took a look and said our clients are starting to place more demands now on growth. So we had to start thinking about, What kind of changes did we need to make as an IT team to not just match the Delphi enterprise, but to start getting in front of the Delphi enterprise?

We were changing our focus from [taking] the cost out to bring-

ing value to the organization. The client-facing team gets stronger. We put more focus on having strong business acumen. Being an IT professional is important, but understanding profit and loss, business cases, return on net assets, started to take much more precedence. We were no longer worried about how much money we could save. We were worried about how much more revenue we could [make] in our business model.

Now it's 2013 and we've even moved one layer deeper: We're now focusing on value. Our clients are starting to say: If I give you a dollar, can you generate \$1.50 in value?

Tell us what "Safe, Green and Connected" means.

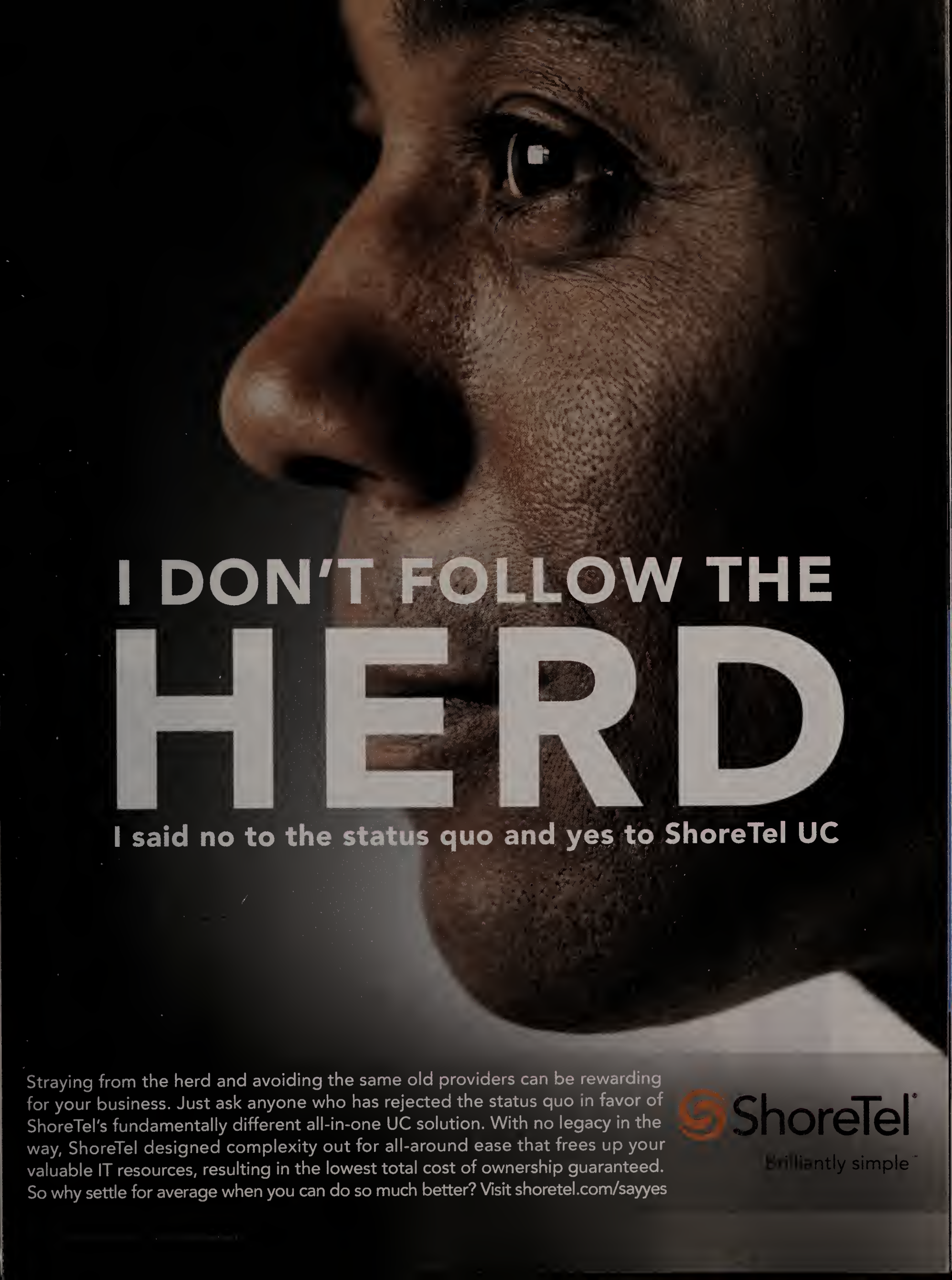
Safe is the product portfolio we offer to make your driving experience as safe as possible. Crash avoidance, crash sensors, lane-departure warning, distracted-driver technologies. Green relates to how we manage the consumption of air and fuel to limit particulate matter, improve miles per gallon. The connected piece is how we use technology inside a vehicle. At CES this year we announced a product called Vehicle Diagnostics by Delphi (with partner Verizon Wireless) that allows an owner/user/driver to monitor how that vehicle is being used. You can see how often it turns, where it turns to, where it goes, [when it] brakes, speeds, those kinds of things.

Having gone through this transition, what are the key lessons that are applicable to other technology leaders?

The number one lesson is to be contextually aware of the business. It's not enough to know what the company does, you have to know why it does it and who does it and what the needs are.

Number two is to always be out in front of your client, but not too far in front. If you're out talking about cloud and they're still thinking about dirt, you're going to be irrelevant.

John Gallant is chief content officer of IDG Enterprise. Read the full interview at www.cio.com/article/737834.



I DON'T FOLLOW THE HERD

I said no to the status quo and yes to ShoreTel UC

Straying from the herd and avoiding the same old providers can be rewarding for your business. Just ask anyone who has rejected the status quo in favor of ShoreTel's fundamentally different all-in-one UC solution. With no legacy in the way, ShoreTel designed complexity out for all-around ease that frees up your valuable IT resources, resulting in the lowest total cost of ownership guaranteed. So why settle for average when you can do so much better? Visit shoretel.com/sayyes

 **ShoreTel**
Brilliantly simple™

Social Media at 35,000 Feet

Virgin America caters to social influencers, but ROI metrics remain elusive **BY MARY K. PRATT**

Tony Amrich, manager of social media guest service at Virgin America, wanted insight into the current buzz his company was getting online.

He quickly pulled up a stat: 706 social posts about the airline in the prior 24 hours. He could see where those messages were posted—Twitter, Facebook, LinkedIn, YouTube, Instagram and Google+—and track when someone from Virgin America responded.

Amrich and two colleagues, who together are the 6-year-old airline's social media team, use social media management software from Sprinklr to tally activity, schedule posts and engage with customers posting messages. He sets up searches for keywords, such as “@VirginAmerica” and “Virgin Airlines,” whether they're separate words or run together. Sometimes the team is responding to everyday issues, such as someone tweeting about an item left on a plane or a tag on >>>



ILLUSTRATION BY LISA ADAMS



C-LEVEL EXECUTIVES ARE ALL COMING TO THE SAME CONCLUSION

THE "C" STANDS FOR "CUSTOMER"

Whether you're talking cloud migration, social media strategy, or how mobile aligns with your modernization roadmap, the dialog must center around your customer. Because when you remove the distractions, it's the customer who drives business decisions. And it's business that defines technology requirements. Sound too easy? Well, it can be—when all the "Chiefs" in the room agree that the customer is really in charge. Let's talk about your business. Visit NTTDATA.com/flex

THINK SMART. ACT FAST. FLEX YOUR BUSINESS.

NTT DATA
Global IT Innovator

►► **Social media** Continued from Page 24

Facebook praising the company.

Other times, the team must deal with situations with larger implications for the airline, which is part of Richard Branson's Virgin empire. For example, when filmmaker Kevin Smith tweeted and blogged a complaint about missing his flight due to the poor timing of the airline's concierge service, the team leapt into action. Using Sprinklr's real-time monitoring, dashboard and email alert capabilities, Virgin was able to send an email to Smith's assistant to resolve the problem—a customer service coup that Smith praised in a follow-up tweet.

Beyond Likes and Followers

While Virgin America monitors social media traffic overall, the company also identifies certain customers as influencers. They're generally people with at least 50,000 Twitter followers or the highest-level members of the airline's frequent flyer program. The Sprinklr software sends email alerts when those folks post anything about Virgin America, so he and his team can respond quickly if needed.

Calculating the dollar value of social media activity is difficult for Virgin America and many other companies. Of 3,000 marketers surveyed recently by Social Media Examiner, only 26 percent said they were able to measure the monetary returns of their social media efforts. To determine ROI, companies need numerous departments to integrate social media data with other internal and external information sources, says Susan Etlinger, an analyst at Altimeter Group. That requires heavy involvement from the IT department, she says.

The key is to go beyond tracking simple numbers of likes and followers to look at outcomes. The more useful goal, she says, is to derive metrics that matter to people in the C-suite: revenue and profit, but also measures of innovation and speed to market.

Companies can start by looking at examples where social media activity was known to influence sales, she suggests, or by comparing the behavior of one group exposed to social media content to another group exposed to no or different material. Eventually, Amrich wants to take Virgin America into deeper social media analysis. But for now, he says, quickly reacting to the real-time buzz makes a positive difference.

Mary K. Pratt is a freelance writer based in Massachusetts.

CIOs Must Embrace BYOD Policies to Lure Millennials

BY TOM KANESHIGE

Despite talk that the bring-your-own-device (BYOD) phenomenon is losing its buzz, CIOs who think they can abandon the practice risk alienating an important and growing segment of the workforce: millennials, also known as Gen Y.

BYOD in the workplace appeals mainly to younger employees, according to a report from CompTIA, an IT trade association. Nearly two-thirds of millennials use a personal device at work, compared with just a third of baby boomers.

But why should CIOs cater to millennials? Numbers. By 2015, they'll make up the largest segment of the workforce, according to the Bureau of Labor Statistics. And CIOs will play an important role in recruiting them. CompTIA found that three out of four men ages 20 to 49 consider a potential employer's tech savviness a significant factor in choosing to work there. This means CIOs will need to showcase their company's tech coolness and flexibility. BYOD can help.

The Talent Wars: Already, Silicon Valley tech companies are fighting to hire millennials, pitching technology flexibility, such as BYOD, and other perks to woo young workers. They can't use the same playbook they wrote for the preceding generation.

When tech executives gathered in July at a Commonwealth Club event in San Francisco to discuss the future of the workplace, Rowan Trollope, general manager of the collaboration technology group at Cisco, told the crowd, "Gen X is tech-savvy, while Gen Y is tech-dependent."

Further insights into millennials' attitudes toward technology can be gleaned from statistics compiled by CompTIA:

- 43 percent of 18-to-24-year-olds say that texting is just as meaningful as a phone conversation, according to eMarketer.
 - 40 percent of millennials think that blogging about workplace issues is acceptable, compared to 28 percent of baby boomers, according to market researcher Iconoculture.
 - Pew Research says 24 percent of millennials say that technology use is what makes their generation unique—the number one answer.
 - 74 percent had used a smartphone for work in the past year, compared to 37 percent of boomers, according to CompTIA.
 - And two-thirds of millennials assess their own technology acumen as "cutting edge" or "upper tier," according to CompTIA.
- CIOs will have to cater to this type of worker. As a generation dependent on technology, millennials often feel impatient with clunky and dated corporate-issued devices and apps. BYOD lets them use the technology of their choosing.

Tom Kaneshige is a senior writer at CIO.com.



VERINT

Verint Systems and Carlson Craft
invite you to share the joy of
20% higher service levels
and
15-second shorter calls
by embracing
Voice of the Customer Analytics™

**A leading printer of wedding and social stationery is
pushing customer service through the roof
with the help of Verint solutions.**

How can we help *your* enterprise?

When Carlson Craft®, a leading printer of wedding and social stationery, added Verint® Voice of the Customer Analytics™ to its contact center, it was a match made in heaven. By analyzing its calls, the company reduced average handle times by 15 seconds and increased service levels by 20 percent, all while shortening shipping times. Learn how Verint solutions can help your enterprise achieve Customer-Inspired Excellence.™ Visit verint.com/excellence or give us a ring at 1-800-4VERINT.

customer-inspired **excellence**™

© Copyright Verint Systems Inc. 2013. All Rights Reserved Worldwide.
Results may not be typical.

LEGAL AFFAIRS

Who Owns That Twitter Account?

Social networking accounts used for both personal and work purposes can raise tricky legal questions **BY ZACH MINERS**

Noah Kravitz built up quite a following at PhoneDog, a website for mobile-phone news and reviews. By late 2010, his Twitter account had more than 17,000 followers. But then Kravitz resigned to work for a competitor—and took his followers with him.

That's when PhoneDog, unwilling to let go of 17,000 fans that easily, filed a lawsuit against him.

The question of who owns an employee's social networking account when it's used for work-related posts is a legal grey area, as more companies are discovering when they wind up in court trying to keep readers, business contacts and other social connections within the fold.

"Social media law is a developing area," says attorney Cary Kletter, who represented Kravitz in the PhoneDog case. PhoneDog's lawsuit alleged misappropriation of trade secrets, arguing that the password for the Twitter account was confidential information that allowed Kravitz's new employer to unfairly compete against PhoneDog.

The case played out in 2011 and 2012 in federal court and was eventually settled under undisclosed terms.

But Kravitz got to keep the account.

"Many employers today don't give much thought to post-employment ownership of, say, Twitter followers," says Jennifer Archie, an attorney with Latham and Watkins. Determining what makes an account personal versus professional is tricky. "People's professional work often bleeds over into their personal time thanks to the interconnectedness of mobile devices, and that's only one way ownership disputes can arise," Archie says.

The best way for employers to avoid legal disputes is to craft clear policies about whether the company or the employee will own job-related social media accounts, and what happens to an account when an employee leaves the company, says John Delaney, who heads the social media practice at Morrison and Foerster.

If a company wants to claim ownership of a social media account, the account should be used exclusively for business and the account name should refer to the company or brand name, not the employee's name, Delaney says.

Zach Miners is a U.S. correspondent with IDG News Service.

Higher Ed Is Due for More Female CIOs

There has been a slow, steady decline in the percentage of female CIOs in higher education, but that trend could reverse itself in the next decade, according to research from the Center for Higher Education CIO Studies (CHECS).

Currently, 21 percent of university CIOs are women, down from 26 percent in 2008. But among CIOs, more men than women are planning to retire in the next 10 years, opening the door for more women.

That's one finding of the center's

wide-ranging survey of 360 CIOs in higher education. Wayne Brown, founder of CHECS, says many factors may have kept women from becoming CIOs, including the fact that they are less likely than men to have a computer-science degree. The study reports that 51 percent of university management teams say CIOs should have had a technology major.

Management teams also prefer CIOs with advanced degrees, the study says, adding that there's a correlation between the level of the CIO's degree and who they report to. Forty-four percent of university CIOs with doctorates report to the CEO, compared to 30 percent of CIOs with master's degrees and 26 percent of those with bachelor's degrees.

Brown, a former CIO, says it's crucial for the CIO to have a seat at the management table and, at present, only 32 percent of university CIOs report to the CEO, which is an all-time low in the 10-year-old study. "If you report to the CFO, you may never have contact with the other VPs," he says. "[CIOs] make huge, expensive decisions all the time, and they could be doing it in a vacuum."

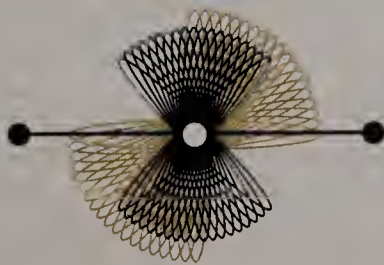
The lack of CIOs at the management table could be a result of management teams that still don't view CIOs as true leaders, Brown says. Management teams ranked leadership as the third-most-important skill CIOs should have, behind communication and technical knowledge.

—Lauren Brousell



**IT'S NOT ABOUT YOU.
IT'S ABOUT YOUR
CUSTOMER.**

You don't buy communications products for your own benefit. You buy those products so you can better service your customers. Our products and cloud-based services are developed to help you deliver the best possible experience to your customers – turning that superior experience into a competitive advantage for your business. Give your customers choices in the media types they use to contact you. Give your employees immediate access to information and documents so they can respond more quickly to your customers. Provide automated self-service that allow your customers to complete transactions without frustration. Each customer is unique. The service you deliver should be unique as well. Now you can deliver more.



INTERACTIVE INTELLIGENCE®

Deliberately Innovative

www.inin.com

CONTACT CENTER • UNIFIED COMMUNICATIONS • BUSINESS PROCESS AUTOMATION
Cloud-based or On-premises

The Looming Brain Drain

Boomers will be retiring soon and taking their institutional knowledge with them. Can you give them a second act? **BY FRED O'CONNOR**

With 10,000 baby boomers turning 65 every day, IT departments must plan for what happens when their older employees retire. Even IT professionals who keep working after 65 may not want to maintain a full-time schedule.

While IT emphasizes the new and innovative, legacy system skills are still valuable because some companies run critical systems on dated technologies. Even when firms migrate to newer technologies, workers with older skills are needed to help with the transition.

Companies keen on retaining veteran workers—and their knowledge—are initiating retirement conversations early to increase the likelihood that these employees will stay on in some capacity after they stop working full time, says Matthew Ripaldi, senior vice president at IT staffing firm Modis.

Prepare for Retirements

Businesses need to develop a plan for retaining valuable senior employees while also providing the flexibility they seek, he says. This flexibility can take the form of contract work, which allows employees to stay engaged with IT without having to work full time, Ripaldi says.

The number of contractors in IT—already high—will continue to increase as companies allow retiring staff to work part time or hire them for short-term projects, he says. Mentoring programs will also expand so these contractors can impart know-how about legacy systems to younger employees who will be expected to integrate new and old technologies.

Of course, some legacy systems will be phased out, another situation where retirees could serve as consultants to help with the transition, says John Engates, CTO of cloud hosting company Rackspace. “For some of these baby boomer retirees, there may be an opportunity to start their own consultancy in helping companies get off these older systems and modernize,” Engates says.

Ajay Waghray, CIO at Verizon Enterprise Solutions, retired about 160 systems last year and has retired another 60 so far this year. He says Verizon maintains “a pretty good [employee] progression map, particularly in managerial roles,” which helps the company plan for future employment needs, some of which may be caused by retirement.

As for the possibility of retired employees returning as consultants, Waghray says there hasn’t been demand for that so far, but Verizon might need it in the future.

Chip-maker Intel, like Verizon, isn’t seeing mass departures or the loss of institutional knowledge yet. “We’re just starting now to think about how we’re going to approach that,” says Julie Wirt, Intel’s manager of global retirement design. “In five years we’ll be in a different situation.”

“Many employees want to stay engaged in some manner past normal retirement, but they’re looking to do that in a different way.”

—Julie Wirt, Manager of Global Retirement Design, Intel

Time for an Encore

Last year, Intel launched an Encore Career Fellowship that gives employees who are close to retirement a \$25,000 stipend and allows them to spend one year applying their skills to new positions with social value.

For example, the Encore program paired Ken Wolff, an Intel employee who retired in June 2012, with Music for Minors, which provides music education programs for elementary-school students. At the nonprofit, Wolff is converting sheet music into digital files and producing videos.

Intel is using the fellowship program to understand how to discuss retirement and the needs of its employees with its baby boomer workers. The program also helps people who lack clear retirement plans to start thinking about what they may want to do next.

“Many employees [at Intel] want to stay engaged in some manner past normal retirement,” says Wirt, “but they’re looking to do that in a different way.”

Fred O’Connor writes for the IDG News Service.

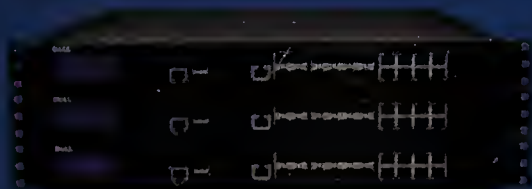
For deeper network security

look beyond the obvious.

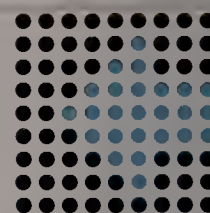
Dell™ SonicWALL™ next-gen firewalls provide a deeper level of network security without slowing down performance.

Not all next-generation firewalls are the same. To start, Dell SonicWALL next-generation firewalls scan every byte of every packet while maintaining the high performance and low latency that busy networks require. Additionally, Dell SonicWALL network security goes deeper than other firewalls by providing high-performance SSL decryption and inspection, an intrusion prevention system that features sophisticated anti-evasion technology, and network-based malware protection that leverages the power of the cloud. Now your organization can block sophisticated new threats that emerge on a daily basis.

Go deeper at: www.sonicwall.com/deepernetsec



The power to do more



Flash Forward

EMC makes a big play for the flash storage market, but faces rivals in the data center

BY STEPHEN LAWSON

THE PITCH

EMC came early to enterprise flash storage, shipping its first product in 2008, and it's still increasing its investment in the hot technology. More than half its new R&D expenditures are going into flash, and just nine months ago the company formed a division dedicated to it. EMC sees a long-term move toward all-flash data centers and wants to make sure its efforts have enough "oxygen" within the company, says Zahid Hussain, SVP and general manager of EMC's Flash Products Division.

Last year, EMC went beyond hybrid flash-and-disk arrays by acquiring XtremIO, a startup developing all-flash systems. The resulting products are set to ship later this year. The company has also started to pursue server-based flash, which gives applications the closest and fastest access to data. With its ScaleIO acquisition earlier this year, EMC plans to let enterprises pool flash assets from many servers into a primary storage tier.

THE CATCH

EMC probably has the broadest flash lineup of the established storage vendors, including IBM, Hewlett-Packard, NetApp and Dell, says Taneja Group analyst Arun Taneja. But data storage is starting to merge with computing and other areas where EMC hasn't been a major player. When flash resides in servers and caches in various parts of the data center, coordinating all the pieces requires computer expertise, he says.

"Storage guys have to understand applications all the way up, and storage guys have to understand what's happening in VMware or Hyper-V, because if they don't, then the applications just suffer," Taneja says. "All the boundaries are gone."

The danger to EMC is that vendors such as IBM or HP could use their

data center presence to gain the upper hand, Taneja says.

Another hazard is that EMC's server-based caching could eat into the company's own sales of fast, high-end spinning disks, says analyst Mark Peters of Enterprise Strategy Group. But EMC isn't afraid of this, he says. "I don't know whether they embrace change, but they certainly manage it very well," Peters says.

THE SCORE

EMC's new technology and long track record as an IT vendor could combine to make it a strong player in the flash storage market.

An IT manager in the engineering department of a large university says EMC's XtremIO all-flash array boosted the performance of a desktop virtualization system at the school.

THE COMPANY

EMC Corp.

Headquarters: Hopkinton, Mass.

Employees: 60,000

2012 Revenue: \$21.7 billion

CEO: Joe Tucci

What They Do: EMC supplies a wide range of storage, big data and cloud computing products, as well as security offerings through its RSA division. It is the majority owner of VMware, and last year the company acquired agile development service provider Pivotal Labs.

The engineering department gives students virtual desktops in its classrooms to run complex applications such as AutoCad and Matlab. As one class leaves and the next arrives and logs in, the storage system is heavily taxed, the IT manager says. Meanwhile, virtual desktops are catching on across the department.

"We needed to invest in a technology that was going to give us more breathing room in terms of dealing with growth," says the IT manager, who asked not to be named.

In its first week of use, the XtremIO array seemed to improve performance significantly, the IT manager says. He saw Matlab starting up in 15 seconds, compared with a minute or more without the flash array.

The customer also considered a startup's product, but EMC got the nod because it's a known quantity as an IT vendor.

Stephen Lawson is a senior U.S. correspondent with IDG News Service.

Reduce Technology Risk Now via Automated Business Process Validation

"SAP HANA® represents a transformational change for companies that run SAP®."

—Shoeb Javed
CTO of Worksoft Inc.

NEW TECHNOLOGIES LIKE SAP HANA® in-memory databases, mobile computing and migration to the cloud are creating huge business potential today for global enterprises. But deploying them can bring enormous change to already complex enterprise system landscapes. Change can have unintended consequences, and that means risk.

"Some companies have a handful of enterprise applications in use. Some have a hundred or more, including SAP® as a significant component," says Shoeb Javed, CTO of Worksoft Inc. "Companies have to ensure that their business processes work correctly across a much wider variety of systems than ever before. While these technologies create great opportunity for businesses, they also introduce significant risk. If a critical application fails, business processes can come to a grinding halt."

How can IT organizations ensure that critical business processes continue to work as planned, when system changes are introduced?

SAP HANA, for example, is designed to tackle big data challenges by enabling organizations to match real-time analytics with transactional data. It will allow companies to make more strategic decisions and could fundamentally change the way they do business.

"SAP HANA represents a transformational change for companies that run SAP," says Javed. "HANA allows companies to use real-time data in new ways—so it will change business processes and drive additional upgrade cycles for companies looking to deploy it."

Javed notes that many other drivers also increase the level of technology risk. This can come from mergers or splits, internal reorganizations, new regulatory or legal mandates, new software modules or updates of existing apps.

CIOs working in this increasingly complex environment are challenged to reduce the likelihood of unexpected events and project failures. They must be able to ensure that with any change to applications or infrastructure, critical business processes will continue to function. For this to happen, legacy tools and manual testing are not viable options.

Validate business processes with end-to-end automation. Lower risk. Lower expenses.

"You may be able to manually validate a business process with 10 variations, but what if you have a business process that works with 10 different mobile devices and operating systems? You now have 100 tests instead of 10 tests," says Javed. "And if the process spans 10 more enterprise systems, you've just multiplied the challenge a thousandfold. You have to automate business process validation just to keep up."

With end-to-end business process validation, CIOs can identify issues before they become problems, thus reducing risk and lowering the total cost of ownership of managing the enterprise's business applications. Automated solutions for business process validation enable companies to conduct business with reliability and without disruption, even as they reduce expenses.

Of course, there's always the option to do nothing or to stay with a piecemeal manual approach—and hope that everything works together as it should. And if it doesn't?

"The risks can be catastrophic," warns Javed. "If you have a system failure these days, it can mean that you stop taking orders or that your reputation suffers. And in this 24/7/365-connected world, that can happen instantly. If you are able to verify with the push of a button that 98 percent of your business processes work correctly, that is a huge risk-mitigating factor."



To learn more, go to
www.worksoft.com/risk

Getting 'Em to Play Nice

How to get multiple IT services contractors to focus on collaboration rather than finger-pointing **BY STEPHANIE OVERBY**

There's no doubt that multisourcing—parceling out the IT services portfolio among multiple vendors—has its benefits: competitive pricing, increased flexibility and access to a deeper pool of talent.

But working with multiple providers creates multiple challenges, not the least of which is trying to get all of those competing vendors to play nice.

For one thing, there may be no incentive for the providers to work together. Multisourcing has entered the mainstream, but outsourcing contracts and negotiations haven't kept pace with the trend.

"One major challenge is simply the way that outsourcing contracts are typically negotiated," says Lois Coatney, a director with outsourcing consultancy Information Services Group.

"At a basic level, providers are financially motivated to get the highest possible fee for the least amount of work. This leads them to focus on their particular scope of responsibility, and to be very diligent about specifically defining what they are and aren't responsible for," Coatney says.

Each provider is often focused on a specific tower of service—such as infrastructure services or application support—and focuses its negotiations on service levels within that domain. "The touch points *between* towers are frequently neglected," says Coatney. "Providers, again, have little incentive to build bridges and take on additional responsibility for issues that aren't within their scope."

Outsourcers may agree to col-

laborate in theory, but contracts often fail to require that collaboration, or discuss it only in unenforceable language. "As a result, you often see individual providers conclude that it's in their best interest to protect their turf and to find ways to show that fixing whatever problem arises is

During the transition: Invite all the providers to a workshop that examines each key process. "This makes it possible to break down activities at a granular level of detail and allows providers to reach a collective agreement on how each shared process will work and how

Spell out who is responsible for what and eliminate the opportunity or incentive to make excuses.

the responsibility of another team," Coatney says. Not only do clients not get the benefits of collaboration, they also spend most of their time solving disputes and putting out fires.

Coatney suggests the following steps for encouraging IT service providers to work together.

During the contracting phase: Paint a picture of what the multisourced environment will look like, setting expectations for collaboration that providers can build into their offers. "The language in the contract needs to require interactions between providers and specify how collaboration will happen when issues arise," says Coatney.

Mandate activities such as regular cross-provider governance forums. Consider a "pain-sharing" mechanism like service-level agreements (SLA) that cover transactions involving multiple providers from end to end. If the SLA is breached, all involved service providers are penalized. "You want to spell out who is responsible for what and to eliminate the opportunity or incentive to make excuses," Coatney says.

the various providers will engage with each other, and what the specific accountabilities will be within each collaborative process," Coatney says.

Walk through how cross-provider interaction will play out in various business scenarios and anticipate issues that can arise during the operations phase.

During day-to-day operations: Don't let dust collect on the collaboration processes laid out in the contract. "The operational governance forums need to be convened on an ongoing basis" to analyze performance and ensure continuous improvement, says Coatney.

Such cross-provider governance teams encourage each vendor to collaborate on problem-solving rather than finger-pointing. "By reporting and addressing operational performance as a collective exercise, you also create a culture of positive peer pressure," says Coatney, "where no provider wants to be identified as the one hurting the team."

Stephanie Overby is a regular contributor to CIO.com's IT Outsourcing section.

The interoperability to expand your provider network



We offer a platform for Strategic Interoperability.

Our technology is essential if you hope to seamlessly and smoothly consolidate with other hospitals and IDNs, and to make breakthroughs in your strategic initiatives for coordinated care.

Add our HealthShare platform to your EMRs.

InterSystems HealthShare® will give you the ability to link all your people, processes, and systems – *and* to aggregate, analyze, and share all patient data. With HealthShare, your clinicians and administrators will be able to make decisions based on complete records and insight from real-time analytics.

INTERSYSTEMS®

InterSystems.com/Ability6F

Aging HR Systems Face Retirement

Hosted applications are rapidly replacing legacy HR packages

BY JOHN MOORE

BPR-Rico Equipment recently decided it was time for a change in its human resource systems.

The private company, which builds lift trucks and other material-handling equipment, had been using on-premise HR software that was more than a decade old and had acquired some eccentricities. For example, the system would randomly change employee dental insurance deductions to the rate from two years prior.

Rico Equipment was already replacing its paper-based time card system with cloud-based time and attendance software from Kronos. The company decided to tap Kronos to replace its HR and payroll system as well—and move it to the cloud.

The company went live on Kronos' software-as-a-service (SaaS) HR system in July 2012. The time-and-attendance system kicked in two months later. Kent Stelmasczuk, CFO at Rico Equipment, says the Kronos

SaaS approach costs the same as the on-premise system, considering only the software licensing fees and not factoring in hardware costs. "Anything we save on hardware is all upside," Stelmasczuk says, noting that the company had been preparing for a server upgrade before the cloud shift.

Moreover, Kronos handles the job of keeping the software current. "We don't have to do the application of the updates and patches," he says. "It is all happening behind the scenes."

The age of many HR systems encourages migration to a new platform—and that often means SaaS. Up to 90 percent of Fortune 1000 companies will replace or revamp their core HR system in the next four years, says Jason Averbook, chief business innovation officer at cloud services provider Appirio. "Most of the software that's out there was written before the Internet was born. It doesn't meet the needs and expectations of employees

and managers. That's why you see so much activity around the cloud."

Vendors offering HR applications in SaaS form include ADP, Ceridian, Kronos, Oracle, SAP and Workday.

Hosted HR software is also attractive to the Department of Veterans Affairs (VA), which has a 10-year, \$123 million contract with IBM for the phased implementation of an HR system that includes Oracle's PeopleSoft. That deployment will replace a legacy HR application from the early 1960s.

"For [the] VA, a vendor-hosted HR solution just makes sense," says Paula Molloy, associate deputy assistant secretary for HR, policy and planning. "It allows us to deliver functionality without a major infrastructural investment, and frees up our IT resources to focus on those applications that truly need to be in-house."

John Moore is a freelance contributor to CIO.com.

Clouds Are Backing Up Clouds for Extra Protection

Enterprises that rely on cloud-based services are getting more options for falling back on another cloud if necessary.

Nasuni, an enterprise storage company, recently introduced a cloud-to-cloud mirroring option to give customers extra assurance that their data will be available in case of a service outage. And cloud-to-cloud backup vendor Backupify added more choices for where users can have their data sent.

Both Nasuni and Backupify provide backup services that operate on top of larger cloud storage operations such as Amazon S3. Many enterprises are looking to cloud services for storage, often to get away from buying and operating hardware of their own, according to Enterprise Strategy Group analyst Mark Peters.

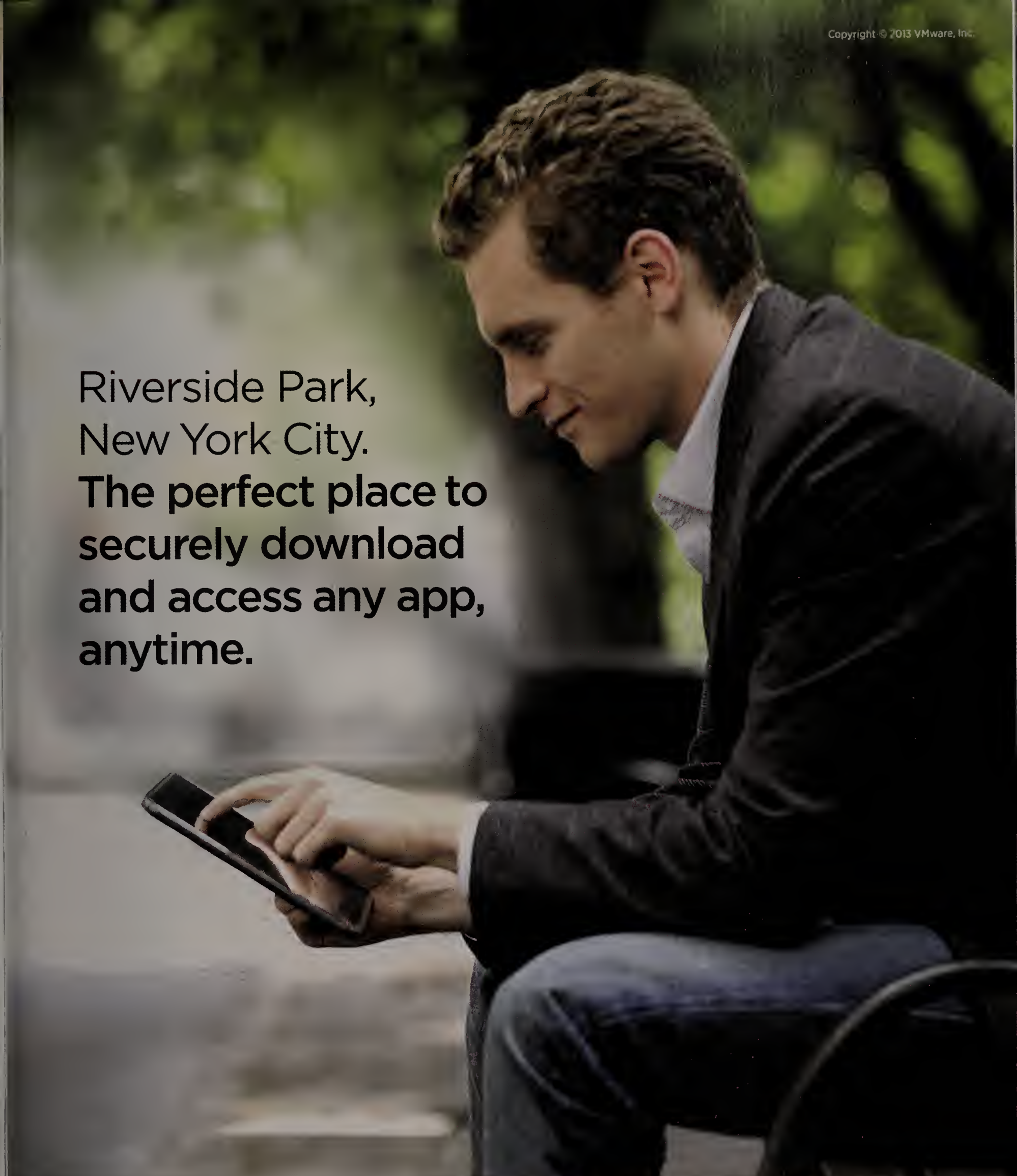
Cloud storage has proved pretty reliable, and using one cloud-based service as backup for another should make users' data even safer, Peters says. "Logic says the odds of Amazon and Google going down on the same day, with your data, and not being able to

do something about it, is hard to fathom," Peters says.

Nasuni gives enterprises access to their data through on-site hardware that looks and feels like a traditional storage controller while actually storing the contents on S3 or Microsoft's Windows Azure cloud. The company is now adding an optional feature to its service that will mirror the data on the primary cloud to a secondary one. With the mirroring service, customers with S3 as their primary cloud would have their data mirrored to Azure, and vice versa, the company says.

Backupify backs up cloud data to Amazon S3 so it can maintain its own copy of the data from services such as Salesforce, Google Apps, Facebook and Twitter. That data is encrypted with a customer-specific key and stored in Backupify's storage bucket on S3. Its customers will now have the option of having their data backed up to a different cloud, CEO Rob May says.

—Stephen Lawson

A man with short brown hair, wearing a dark suit jacket over a light-colored shirt, is sitting outdoors. He is looking down at a tablet computer he is holding in his hands. The background is a blurred green, suggesting a park setting.

Riverside Park,
New York City.
**The perfect place to
securely download
and access any app,
anytime.**

Empower your mobile workforce to access their applications, files and desktops to maximize their productivity while maintaining the control and security you need to sleep at night. VMware Horizon™ Suite, built on vSphere®, the leading platform for the new cloud era, is the perfect mobile platform.

Horizon™ Suite
The Power to Empower.

vmware®

**CIOs who won the CEO job
talk candidly about the relentless pressure for profits,
the ultimate accountability and what they wish they'd known as CIO**

38

CEO

Ambitions

BY KIM S. NASH

Kevin Horner was a damn good CIO.

At the helm of IT at Alcoa for three years—and as CIO of various divisions for 11 years before that—Horner led the \$23.7 billion company to numerous honors, including two CIO 100 Awards. He ran IT like a business, showing the cost of the technology and services each internal group consumed. He met with key senior leaders to understand their needs. He did a two-and-a-half-year stint in Europe, gaining global experience. He sat on an outside board of directors.

Horner did the things CIOs are supposed to do to be strategic, to be game-changing, to transcend IT. So in October 2011 when he was offered the CEO position at Mastech, an IT staffing company, he was ready.

Or so he thought. His first 18 months as CEO revealed gaps in his skills and experience.

"I was a pretty good CIO, and still there's a bunch of stuff I was just absolutely missing," Horner says.

The CEO job has never looked more attainable to CIOs. In today's business climate, the monster forces of social media, mobility and analytics technology are moving tectonic plates beneath traditional C-suite roles. CIOs are bumping up against fellow officers as IT becomes the number-one tool for building strategic advantage. A CIO who can make clever use of data and technology to create new revenue may be well-positioned to lead a company. It's no tidal wave, but it is happening. In

July, former Burger King CIO Raj Rawal became CEO of Fresh Diet, a small meal-delivery company. Also that month, Guy Chiarello quit as CIO of JPMorgan Chase to be president of First Data, a \$10.7 billion financial services powerhouse. At Cisco, CIO Rebecca Jacoby is one of five executives said to be in line for the CEO job. Companies in real estate, oil, services and healthcare have also appointed CEOs who are former CIOs.

"We may not be commonplace, but there are some kinds of businesses crying out to be run by someone with a big tech background," says Kirby Slunaker, president and CEO of Metrolist, a privately held real-estate listing ser-

You don't really understand the nuances and pressures of the CEO job "until you sit there," says **Chris Lofgren**, CEO of Schneider National, and formerly its CIO.

SCHNEIDER TRANSPORT
& STORAGE

STRAIGHT *to* THE TOP

Kevin Horner, CEO of Mastech and former CIO of Alcoa, offers advice for CIOs who aspire to the top job

➔ **Create time to focus** on strategy-setting and customer issues by delegating as much of your daily operational tasks as possible and developing potential CIO successors.

➔ **Develop a network** of executive peers and mentors inside and outside your company so you can learn some of the nuances of performing C-suite jobs other than CIO. Volunteer internally to run a large acquisition integration or advise an external nonprofit.

➔ **Work up the org chart** to build relationships with key internal customers. Then help them solve the problems of *their* external customers.

➔ **Make IT strategy** your personal objective. That is, don't delegate it. Spend your newly freed-up time living and selling that strategy.

—K.S.N.

40

vice. He used to be the CIO at Visa USA and eBags.

These CEOs show how far a talented CIO can go. Their personal stories also reveal some basic truths about the top job—truths that may make it impossible for many CIOs to cross over. Some revelations were surprising, such as the relentless storytelling that's required to get and keep employees supporting a common vision. The pressure of profit-and-loss responsibility is intense, especially for CIOs who haven't been exposed to it. Delegating is no longer just a nice idea; it's a necessity. These CEOs felt the full weight of accountability—for strategy, profits, other people's livelihoods—immediately.

And, in the end, CEO is a singular, sometimes lonely job. "You can interact closely with your CEO. But you don't have a full appreciation of what subtleties and demands go with the job until you sit there," Chris Lofgren, CEO of Schneider National, and once its CIO.

PAVING THE WAY

There is some precedent for today's moves. A handful of high-achieving CIOs rose to become CEOs about 10 years ago, as the Web began to rearrange business. Dawn Lepore, for example, was CIO at Charles Schwab at the time and helped invent online trading for everyday investors. She eventually gained the title of vice chairman. In 2004, she quit for the CEO post at Drugstore.com, a pure-play Web company she led for eight years. Now she's a venture capitalist.

Maynard Webb was CIO at PC vendor Gateway, then tech-

nology president at eBay, and, later, its COO. After that, he held the CEO job at customer-service vendor LiveOps for five years. Webb is now an investor in startups.

John Boushy is known for his trailblazing work in customer intelligence in the early 2000s while leading operations and IT at what was then called Harrah's Entertainment. He went on to be CEO of rival Ameristar Casinos from 2006 to 2008.

These executives were true pioneers. Surely some CIOs today are CEO material, Boushy says, but they may not be positioning themselves well. He had his sights set on being CEO early on in his career. "Things didn't just happen to me. I managed them to happen to me," he says.

Like Boushy, some who have recently become president or CEO planned their ascensions. Others took unplanned leaps. From their current vantage point, both kinds of CIOs-turned-CEO offer insights about what they had to learn while they led.

BORN TO LEAD

Doug Haugh says he always knew he wanted to lead. He was captain of his high school football team and president of his college fraternity. In his professional life, Haugh has systematically undertaken the experiences necessary to bring him to top management at Mansfield Oil, a private fuel distribution and delivery company with an estimated \$9 billion in revenues. He was Mansfield's CIO for four years before being named president in 2011. Before that, he was an entrepreneur, president of a real estate developer and a marketing manager at Exxon.

If this ad does not deliver results, we're not paying CIO magazine.

The above is just wishful thinking, alas. Because, as we're all well aware, very few businesses operate on the 'pay for results only' model. Unlike us. Our Business Outcomes model ensures that our clients pay only when the mutually agreed upon outcome is met. This ensures that we keep the costs truly variable, reduce operational expenses, share risks and help you get to the market faster. So you end up paying for results, not effort. Get in touch with us, you could end up saving substantial amounts of money, plus justify what we're paying CIO magazine.

**It's time to pay
only for outcomes.**

Switch to iGATE.

The only company that offers the

**Business
Outcomes
model.**

Contact us at
payonlyforoutcomes@igate.com
www.payonlyforoutcomes.com

 **iGATE**
iTOPS for Business Outcomes

Doug Haugh has systematically undertaken the experiences necessary to become the top executive at Mansfield Oil. A four-year stint as CIO was one step on that journey.

42



CIO, he says, was a step on a journey. He wanted to understand technology management and try to apply what he'd learned in other roles to the IT group. Indeed, he was a dual-hat executive at the time, also holding the title of head of business development for Mansfield. His IT team developed profit-and-loss statements and created products that brought in revenue.

They sold supply-chain systems to a fuel company in Canada, for example, even sending staff there to work as on-site consultants. "The best way to know if you're great is to see if someone else will pay for it," he says.

Before all that, however, in 1999 he cofounded a company that made supply-chain systems for fuel retailers—an experi-

PHOTO BY STAN KAADY

VIEWPOINT



John South

CHIEF SECURITY OFFICER,
HEARTLAND
PAYMENT SYSTEMS

South leads Heartland's security and IT compliance programs, which encompass the protection of sensitive data through risk and threat modeling and compliance with internal as well as industry and regulatory obligations. He was recently awarded the Information Security Executive (ISE) of the Year Award for ISE Central and received the ISE Executive of the Decade Award, both driven by HP nominations.

FOR MORE INFORMATION:
please visit www.heartlandpaymentsystems.com

FOR MORE INFORMATION
on HP Fortify, visit
www.hp.com/go/security



Championing the Value of Application Security

History continues to show that most organizations will at some point suffer a security breach. How an organization responds to a breach and recovers from it speaks volumes. While failure to take proper action can have catastrophic results, demonstrating a resolute focus on fortifying the security of an organization's environment is instrumental in rebuilding trust.

John South, CSO of Heartland Payment Systems, discusses how focusing on application security plays a pivotal role in safeguarding enterprise assets as the organization continues to enhance its security framework after a processing system intrusion.

What led you to embrace HP Fortify, and how has it helped you address application security?

As we came out of the 2008 breach, we were looking for solutions to solidify our application security environment. It was crucial for us to have a system in place to conduct more advanced application analysis, so we could proactively understand where issues might become important to us in the future.

Our goal was to be able to take code that is obviously thousands of lines long and go beyond the peer review and manual review that would give us a chance to find potential security issues. HP Fortify gives us an in-depth analysis as well as a reporting mechanism designed to help developers find solutions.

HP Fortify also lets us distribute analysis capability out to our development team; meaning the QA process can take place within the team itself rather than always having to come back to the security team to identify issues. This allows them to repeatedly run code analysis and fix errors at a faster rate than just having a gating process within security. This is crucial as teams continue to move toward an agile development environment. Last, throughout the process of code review and static code analysis, HP Fortify allows our developers

to understand where they could improve their coding practices to eliminate future problems.

What type of return have you seen on your investment?

While we have not calculated the mathematical ROI, if you look at HP Fortify's role from a security program standpoint, the ability to isolate fairly obscure issues in coding that could represent potential problems is huge.

Considering the number of companies that find themselves subject to SQL injection and cross-site scripting, being able to find and remediate issues quickly saves not only development costs when found early enough in the process, but also remediation costs later if the errors lead to problem situations.

What advice would you offer your peers in a similar situation?

When analyzing your applications, it's important to look beyond external-facing applications. Scrutinizing internal applications allows you to fix vulnerabilities that could surface if someone gains a foothold within the organization. Taking this step helps limit a hacker's ability to jump from one application to another within your environment.

What are your concerns around data and application security?

You would think after 10 years of SQL injection and cross-site scripting attacks that the industry would have it figured out, but these are still constant threats to anyone who is exposing applications to external environments from their networks. The importance of static and dynamic code analysis only intensifies as we continue to embrace mobility.

Applications are still an initial attack vector of choice. Fortunately, application security is something that can be taken care of when you pay attention, including having a complete inventory of your applications ■

CALL
FOR
ENTRIES

Ones to Watch

AWARDS 2014

We're looking for the next generation of standout IT leaders. The CIO Ones to Watch Award honors the rising stars in IT—the senior staff destined to become the CIOs of the future—as identified and sponsored by the CIOs of today's leading organizations.

Apply

CIO magazine and the CIO Executive Council's annual Ones to Watch award identifies the rising stars in IT. To be honored, these future CIOs must have demonstrated leadership, driven innovation and delivered value to their business; in short, they will soon be able to head up their own IT organization. The awards are judged by a panel of veteran CIOs experienced in leadership development, and their feedback will be available to all nominees.

Apply today at: cio.com/otw

Be Seen

Winners will be honored during the all new Computerworld Premier 100 IT Leadership Conference, featuring the CIO Executive Council March 2-4, 2014 in Tucson, AZ and be featured in the March 2014 issue of *CIO* and online at cio.com.

Produced by



In partnership with sister organization

CIO CIO Executive Council
Leaders Shaping the Future of Business

Don't Be Late

Nominations accepted through October 11, 2013. For more information about this and other prestigious programs visit: cio.com/cio-awards

ence that seared powerful lessons about decision making into his brain, he says. Each day was vital to ensuring the company would be alive the next. "When it's you and a handful of guys at a card table, you very quickly get strategy."

The nature of the decisions made by a president or CEO differs from those made by a CIO, he says. For example, in May, Mansfield acquired part of a fuel transportation company in Chicago in a deal that means an extra \$1 billion in annual revenue. The company's CIO worked during the due diligence phase to figure out the costs of supporting more employees, combining remote offices and serving new customers. In contrast, as president, Haugh worked with the CEO and other top executives to decide the larger question of whether to do the deal at all. Would the company gain new competitive capabilities? How valuable were they? Could it retain inherited customers and employees? Was it the best way to spend Mansfield's time and money?

Haugh advises CIOs to get exposure to how choices are made by running a division, advising a startup or serving on an external board. Such experiences teach banking, investing, marketing and human resources skills. "Even if it's small-scale, it's so valuable," he says.

Personally, the skill he works on most as president is effective storytelling and motivating others. A leader cannot repeat his message too often, he says. "It might be the eleventh time you



"You don't have a *full appreciation* of what demands go with the job until you sit there."

-CHRIS LOFGREN, CEO, SCHNEIDER NATIONAL

say it that a person gets it." He uses casual one-on-one encounters, large forums, email and various other methods to talk to his team. "They have to decide [whether] to support your mission or not with every decision they make."

45

YOU'RE CEO. NOW WHAT?

Kevin Horner never intended to be a CEO. He was in Florida

When you're ready to further
develop your top talent

When you're ready to invest
in your organization's future

You are ready for
American Public University

American Public University is ready to help your team succeed. We're a nationally recognized university with bachelor's and master's degrees for business, retail, IT professionals, and more — completely online. So your employees can take classes on their own time. And people are taking notice. 99% of employers surveyed would hire one of our graduates again.*

When you're ready, visit StudyatAPU.com/CIO



*APUS Alumni Employer Survey, January 2011 - December 2011

We want you to make an informed decision about the university that's right for you. For more about the graduation rate and median debt of students who completed each program, as well as other important information—visit www.APUS.edu.

 American
Public
University
Ready when you are.™

with his wife in September 2011, just before retiring from Alcoa after 30 years. He was weighing a couple of manufacturing CIO positions when he got a call from a director at Mastech, where Horner was also on the board. The CEO left “unexpectedly,” Horner says, and the board needed to find a replacement. As a board member, he helped with the search in the following weeks, with no success.

Then his fellow board members asked, What about you? “I’m probably the only CEO who got it without [submitting] a résumé,” he says.

The IT spending of up to \$500 million a year that Horner oversaw at Alcoa is almost five times Mastech’s total 2012 revenue of \$102 million. Horner may be at a much smaller company, but his professional growth has been huge. “I wasn’t scared, but it was maybe a little humbling.”

For example, he says his initial efforts at setting strategy fell short. As a CIO, he defined strategy for his own area and helped shape strategy for the company. But as a CEO, he realized right away that “strategy was mine and mine alone.”

Soon after taking over Mastech, he and the board changed how profit-and-loss was managed and eliminated two executive leadership jobs, among other changes. He and the board also developed a three-year plan for growth that de-emphasized acquisitions and focused on “organic” growth, such as improving recruitment. Sales increased 14 percent in his first year.

“I didn’t worry whether I was 100 percent right, just directionally right,” Horner says. “I made changes and got on with it. Doesn’t mean everything we did in the first 18 months has been right.”

The constitution to deal with risk—and to make decisions without all, or sometimes even most, of the facts—helps make a CEO effective, says Boushy, who is now a consultant. Lacking those traits will hold a CIO back, he says.

Horner ran IT as a services business at Alcoa, which helped prepare him for the nuances of measuring employee and customer satisfaction as a CEO. But, he says, he soon realized that as exacting as he was at Alcoa, it wasn’t “real P&L with real customers.” It was important to please Alcoa’s internal customers and to price IT services competitively. But his customers were essentially captive, he says. “They *could* go somewhere else, but what was the likelihood?”

Now his customers can easily switch IT staffing companies if they’re unhappy with Mastech, he says, which he is acutely aware of every day.

Other advice from Horner: CIOs should delegate as much day-to-day duty as possible so they can spend time with customers, both internal and external. He estimates he spent 8 percent to 10 percent of his time with internal customers, but that should have been at least 30 percent. “I would have known a lot more about what problems they were trying to solve.”

Even when CIOs visit external customers, they don’t have the same experience a CEO does when he’s there, says Lofgren at Schneider National. “When you go as CIO, they appreciate the fact you’re there,” he says. “But a customer who is unhappy won’t push it as hard as they do to the CEO.” CIOs should try to see customers on a trip with the big boss and listen closely to those conversations, he says.

“I was a pretty good CIO, and still there’s a bunch of stuff I was just *absolutely missing*.”

—KEVIN HORNER, CEO, MASTECH

Overall, Horner is happy as a CEO and is satisfied with his performance. Jumping in, he knew he’d have some learning to do. But he describes himself as someone who takes charge when tasks need to be done. He doesn’t stand still, waiting for direction.

Such a “leadership personality” is key to being a successful CEO, says Ernest von Simson, co-founder of advisory firm Ostriker von Simson, which runs the exclusive CIO Strategy Exchange. The catch is that some executives think they have it when they don’t. Part of the trouble is that, generally, CIOs are internally focused, von Simson says. That is, they concentrate on how systems run, how technology is installed and how data is analyzed.

CEOs, though, “are about the future and the outside world,” he says. That includes customers, yes, but also critical areas such as government, the economy and foreign relations. And they think ahead in terms of decades. Von Simson saw that capacity in Horner and told him so when he called for advice about the Mastech offer. “I told him to take it and don’t look back.”

SOLITARY EXECUTIVE

Chris Lofgren has been looking back lately. Not with regret, but with a certain wistfulness and self-knowledge that comes from many years of experience. He has made a 20-year career at Schneider National, a privately held trucking and logistics company. He joined the logistics business in 1994 and rose to CIO in 1996. In 2000, he was named CEO of the logistics subsidiary, then COO of the whole company in 2001. The following year, he became CEO.

His progression was natural, Lofgren says, because a logistics company is built on technology. But he never intended to be CEO. When the son of the company’s founder asked him to take the job, however, Lofgren agreed. He likes the breadth of issues he encounters as CEO, including building Wall Street relationships and the corporate chess of laying out a plan with complex interactions to be played out over time. Most satisfying, he says, is talent management, when he can open up opportunities for people to take on more responsibilities and advance in their careers.

These were all skills Lofgren improved with each of his professional stints.

But he misses being a CIO, “the most fun job in my career.” He likes the cause-and-effect and immersing himself in technology and whatever’s new. “You deliver something and the world changes,” he says. As CIO, your impact “is not just measured in financials.”

STOP THE THREAT



 **CyFIR.com**
CYTECH FORENSICS AND INCIDENT RESPONSE

Want to be in the know about the latest IT topics and trends?

Become a CIO **INSIDER**

You'll gain exclusive access to premium content and resources, including:

- What to buy. In-depth reviews of IT and business solutions
- Executive and Peer Interviews and Insights. Deep dives with the industry's top thinkers
- Practical tips. How-to articles for IT and business professionals
- Exclusive research & analysis. Incisive reports, case studies, and more
- How to get ahead. Career advice from industry experts and peers
- Invitations to select events. Get the inside edge

To register for Insider exclusive content visit:
www.cio.com/insiders/index

CIO

In the rough-and-tumble world of the CEO, sometimes things don't go the way you want. Last year, Ron Thieme was promoted from CIO to president and CEO of AIT Laboratories, a privately held medical test company, when company founder Michael Evans stepped down but remained chairman. Seven months later, however, Evans was back and Thieme had resigned. Thieme declines to talk about the details of the reversal. But he says that because he had approached the CIO job from a business viewpoint and was a motivational

more CIOs haven't arrived in the CEO office in the last decade, perhaps because many IT leaders are still too tactical and risk-averse. "The CEO's role in most organizations is about as broad a role as you can have," he says. "One's ability to be prepared for what comes your way—despite the fact that maybe you've never had that experience before—is a very important commodity."

Horner says the portion of potential CEOs in the CIO ranks is "a small percentage."



"There are some kinds of businesses *crying out* to be run by someone with a big tech background."

—KIRBY SLUNAKER, PRESIDENT AND CEO, METROLIST

leader, he was well suited to being CEO.

In his short time as top leader, Thieme recognized he needed a wider mind-set. "Rather than being a partner with all the other functions, they are your direct reports," he says. "You look at how they all work together to improve our position in the marketplace."

Now he is working on a startup company: a poultry and beef farm focused on the local food movement. But he's still on the lookout for a CEO position.

ASPIRING TO THE CORNER OFFICE

Metrolist CEO Kirby Slunaker predicts that more CIOs will rise to the CEO job, citing the fact that, perhaps more than any other officer, CIOs see all parts of the business. Many CIOs aspire to be CEOs. One industry survey found that 42 percent of CIOs worldwide say they have the necessary skills for the job. But just 4 percent of existing CEOs among the world's biggest companies are former CIOs.

Boushy, for one, is disappointed that

He laments the "disservice" some CIOs do to themselves and their IT groups when they tolerate their staff being too focused on in-the-weeds technology in discussions with colleagues outside of IT. "They behave like technical nerds instead of business-improvement folks who happen to know technology," he says.

Now he doesn't tolerate it. "I will stop people mid-sentence and say, 'I don't need to know that.'"

If Horner hires a CIO—and he sees no need for one yet—it'll be someone of a new mold. He'd want someone to spot emerging IT and train professionals on those hot technologies so that Mastech will be out in front of staffing needs. Or the CIO would advise him on smart acquisitions. "They wouldn't be taking care of PeopleSoft and our outsourced email," he says. "They would be helping me grow my business." **CIO**

Contact Managing Editor Kim S. Nash at knash@cio.com. Follow her on Twitter: [@knash99](https://twitter.com/knash99).

Social

Agile

Organic

Transforming

*Enterprise
software for
the social
generation*

Avature
Configured for Talent

www.Avature.net

peer advice from the cio executive council

connect

50



SOUNDING BOARD

Catching the Board's Ear

Telling IT's story to the board of directors requires a business focus, a strong narrative, and even a little humor

KENT MILLS, WAKEFIELD CANADA

FOCUS ON THE BUSINESS PAIN POINTS

As a privately owned company, Wakefield Canada has an advisory board of seasoned executives who offer us an unbiased perspective on how we're running our fast-growing business. While they might not technically have the power of a public board, they play a critical role, and you ignore their valuable input at your own risk.

I communicate with these advisers in much the same way as I do with our senior leadership team, though at a slightly higher level. Whether it's plans for our upcoming ERP implementation or mobile CRM solution, I focus on what the pain points are in our organization and the methods we can use to soothe them, such as streamlining processes or implementing paperless signup for new customers. There's a tendency to want to prove you're the smartest technologist in the room, but the real value ▶▶▶



Kent Mills,
CIO,
Wakefield Canada



Peter Rowe,
Veteran
communications
officer



Charlie Weston,
VP & CIO,
Bloomin Brands



The **CIO Executive Council** is a global peer advisory service and professional association of more than 500 CIOs, founded by CIO's publisher. To learn more, visit council.cio.com.



PC Connection®

WE PUT THE **IT** IN MOBILITY

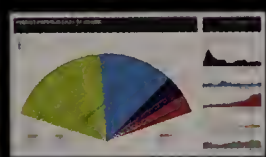
We believe the right mobility solution should **revolve around your needs**, not performance or security limitations.



That's why we help you select the perfect portable devices for your users and environment—and offer the expertise and services to deploy, integrate, and manage them securely and effectively.

We've partnered with HP to deliver technology that works the way you do. Our experts can help you create a mobility solution that revolves around your goals, your mobile workers, and your existing infrastructure.

Notebook, Tablet,
and Everything
in Between



Discover how HP EliteBook Revolve can empower your mobile workforce with enterprise-class security, portability, and performance. Call an Account Manager today to learn about a **FREE** on-site demonstration.



You move at the speed of business—build a mobility solution that can keep up.

WE SOLVE IT.

www.pcconnection.com

1.800.800.0014

►►► **Board presentations** Continued from Page 50

is in proving how your work directly affects business objectives. That's why we call our team Business Technology, not Information Technology.

Even though I'm not looking for a yea or a nay from the board, I treat it as if I am. It's been beneficial to build relationships with board members outside of the quarterly meetings, engaging them in business and technology discussions at events or conferences. They bring a wealth of knowledge and experience to the table, and I want to take full advantage of it.

PETER ROWE

TELL A COMPELLING STORY

I tell CIOs that articulating IT value is all about telling a compelling story, and their meetings with the board of directors should be a crystallization of that story. We begin by presenting to the CEO, telling the story in the language of the business. CEOs, board members—they're incredibly smart people, but they're not technologists.

We look at a number of corporate dynamics and the overall climate in which we operate. What are the macro industry trends? What do our customers need or want? What are our rivals doing? We gather internal documents, publicly available information and interviews with stakeholders to flesh out the narrative. At its heart, it will be a technology story, but we package it in the day-to-day issues of the business.

The CEO typically has a pretty significant voice in whatever content we take to the board. Invariably, we're working the weekend before the meeting to adjust the presentation based on the CEO's input, which always leads to a better product. Then you take your story to the board—the Super Bowl of corporate communications—and tell them how IT is staying ahead of the trends affecting the business. You can then use that story to build out communications for customers, business partners and employees to make sure everyone understands the strategy.

CHARLIE WESTON, BLOOMIN BRANDS

BE STRAIGHTFORWARD AND INJECT SOME HUMOR

Every board has a different vantage point when it comes to IT investments. Public boards are mandated to protect shareholder value, while private boards represent the owners. And a private equity board is focused on ensuring that capital spending gets the company where they want it to go, which sometimes may mean re-emerging as a public company. At the end of the day, however, it all comes back to whether IT is doing the right things. You're not just presenting to the board; you're selling IT.

You must project an air of confidence—the board members may not understand the details of the technology investment, so they have to trust that you do. You also need to be flexible; if they say you're going on at 10 a.m., you probably won't present until after lunch. You should be succinct. Typically, I like to really wring out the ambiguities and make IT strategy as straightforward as possible—IT is likely not the most important thing the board will hear about today. If you think you're at the right level, take it a little higher. Finally, be funny if you can. Board meetings are long, and IT can seem dry. Find that one little thing that can lighten up the meeting. It doesn't all have to be intense.

TAKE Note

Rising Stars in IT

NOMINATE The great IT talent search often targets those with both tech knowledge and strategic business skills. In recognition of this rare combination, CIO and the CIO Executive Council host the annual Ones to Watch Award, honoring IT professionals who have demonstrated leadership skills, driven innovation and delivered business value. A panel of CIO Executive Council members will choose the winners, who will be honored at the Computerworld Premier 100 Leadership Event, March 2-4, 2014. Answer the key question, "What is the number one reason the nominee would make a successful CIO of the future?" and submit the form by Oct. 11. council.cio.com/onestowatch

Align with Your CEO's Agenda

REGISTER Future-state CIOs are not just accountable for IT operations and business processes; they also leverage the expertise of business stakeholders to drive innovation and competitive advantage. On Nov. 6 at a CIO Executive Council development workshop in Chicago, Cars.com President Mitch Golub will share his candid expectations of IT and the CIO position. Attendees will use an assessment tool to evaluate the skills of the leadership team, generate new ideas and walk away with renewed energy to further implement change. council.cio.com/chicago

Executive Women in IT

NETWORK The IT gender gap may be startling, but there are many ways to take action. The Executive Women in IT community of practice within the CIO Executive Council provides ongoing opportunities to share expertise, best practices and solutions to business challenges faced by female executives. Pam Stenson, SVP and general manager of the CIO Executive Council, and Alisia Genzler, VP of Randstad Technologies, host an evening of networking and hors d'oeuvres on Nov. 5 in Chicago to celebrate the advancements of women in technology. council.cio.com/randstad

JOB SEEKER DATA ISN'T RARE.

**A PARTNER WHO CAN
MAKE SENSE OF IT IS.**

Data is only as good as how well you apply it.

Having access to the most relevant, reliable data is only one piece of the puzzle. CareerBuilder helps you make sense of that data. We work with you to leverage more than 15 billion points of job seeker data and build a competitive recruitment strategy around it. Our ability to help clients pinpoint the best places to recruit in demand and hard-to-find technology talent is unrivaled.

Visit www.careerbuilder.com/data to learn more.

careerbuilder®
EMPOWERING EMPLOYMENT

IT's New Role: Idea Generator

At Yum Restaurants International, the value of IT is its ability to facilitate business innovation **BY BARON CONCORS**

Consumer technology is changing rapidly, and CIOs have to respond just as quickly. And that response often starts with changing the mind-set and culture of our department. IT can no longer wait for the business to tell it what to do.

We need to be aware of what's happening with consumers and our team members, and we need to bring ideas to the table. In old-school IT, the definition of success was keeping the email system up all the time or making sure the right security processes were in place. Now that's just the cost of doing business. Success is now measured by what we are doing to drive the business and the bottom line. What operational efficiencies can we deliver through technology? What incremental profits do we enable?

I encourage my team to bring any and all ideas to the table. We need to deliver the best ideas to the business frequently. I would rather be told "no" after sharing a bunch of ideas than have people wonder why I never brought any ideas forward at all.

Global Differences

We're often consulted on emerging topics like online and mobile ordering, CRM, and social media, because those areas are all about technology. One of the interesting aspects as a global business is the differences in consumer behavior around the world. For instance, in Asia, the Middle East, the U.K. and Europe, smartphones have rapidly proliferated; however, in places like Africa, feature phones are common, but smartphones are not. This requires us to adapt our strategy according to each market. We could mandate that every restaurant, no matter what part of the world it's in, has to have mobile ordering, but that doesn't make sense if the local consumer doesn't have a device in-hand.

One of the things we are working on now is how tech-

nology can improve operations in our restaurants. We are testing the use of real-time data so restaurant managers and team members can see operational metrics immediately. If we can deliver real-time data and insights that highlight what they're doing well and whether there's a problem, they can make real-time changes to improve the customer experience. For example, if speed is an important metric—how long it's taking them to make and deliver a

pizza—we want to show that in a fun and exciting way, as well as displaying how they're performing compared with other nearby restaurants. We think this will bring out the best behaviors in our restaurant team members, as compared to just talking about it at a district or regional meeting.

True innovation comes with the risk of failure, so you need the support of the leadership team to try things that may not work. I am lucky to work for a company that's very consumer-focused and driven by an innovation mind-set. When you look at companies that aren't around

anymore, you can only imagine there was a group of people saying, "It's too risky, we can't do it," and that attitude contributed to their demise.

All of this is representative of a cultural change that a lot of organizations are going through. CEOs are frustrated with their technology groups because they see how rapidly things are changing with consumers, but IT doesn't always have the speed it needs to respond.



Baron Concors is CIO at Yum Restaurants International.



The elephant has left the room.

Some dashboard solutions can be a huge drain on your IT team. iDashboards is different. There's no complicated installation processes. No integration nightmares. No need for a team of data analysts. Just easy-to-use tools that allow anyone – from human resources to the c-suite – to build intuitive, custom dashboards that turn mountains of data into better decisions.



 **iDashboards**
Powerful Insights

Check out a demo or start your free trial at iDashboards.com

Better IT Means Better Care

For Dr. Bob Laskowski, president and CEO of Christiana Care Health System, technology means empowering physicians and patients **BY MARTHA HELLER**

How is technology changing the healthcare industry?

Let me respond with a story: On the first day of my internal medicine rotation at the University of Pennsylvania, a distinguished professor held up *Harrison's Principles of Internal Medicine*. He told us to memorize the book, because it contained every-

but now we apply it to everything from process change to organizational redesign.

If you want to convince people at Christiana Care to do something differently, explain how it will be better and easier for the healthcare professionals and their patients. That's a compelling argument.

they are calm and able to reflect, and use the Insight tool to provide information, ask questions and express their concerns. The tool also helps patients overcome discomfort about discussing sensitive emotional and physical health issues when meeting face-to-face.

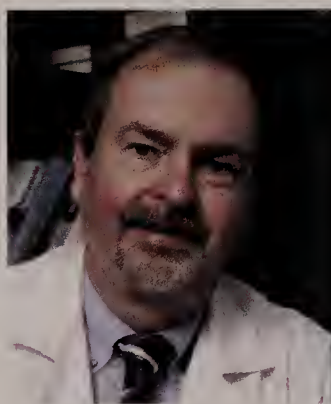
This way, the physician and patient can spend all their time together addressing the most critical and troubling issues, not gathering data.

In the world of healthcare, what is the next big technology innovation on the horizon?

We tend to focus on the information that surrounds a patient, but there is a tremendous amount of information that is actually in a patient, and that's where I see great opportunities for technology innovation. The prospect of making a person's DNA relevant to her healthcare presents a computing challenge of astronomical proportions and profound significance.

Equally as exciting is the way technology will continue to empower individuals to manage their own health. As medical and patient information becomes more accurate, accessible and easily distributed, we will see patients becoming more knowledgeable and more in control of their health. This kind of patient self-actualization has the potential to be revolutionary.

Martha Heller is president of executive recruiting firm Heller Search Associates and author of *The CIO Paradox*. Follow her on Twitter: @marthaheller.



IT should make it easier for doctors to focus on patients and improve the patient's experience.

thing we needed to know. Memorization has been expected of physicians since the Middle Ages. Today, that same textbook is on my smartphone in my pocket. I don't need to memorize it. I can just look up the information I need. As physicians, we no longer need all that knowledge in our minds; we are free to focus more on our patients and on new ways of delivering healthcare. This alone is revolutionary.

As you point out, the medical profession is thousands of years old. How do you create a culture where healthcare professionals embrace technology change?

We have a favorite phrase at Christiana Care: "Better and easier." The phrase was originally used for IT,

I recently saw a cartoon that had a physician looking at a computer with his back to the patient. That's not the fault of technology; that's poor design. Technology should make it easier for doctors to focus on patients and make the patient's experience a better one.

Can you give an example?

Last year, we developed Insight, a tablet-based self-evaluation tool that allows patients to communicate their medical concerns to their doctors prior to their actual appointments. Insight was initially developed for cancer patients, who tend to have so many concerns that their questions vanish from their mind during their time with their doctors. Now, patients sit down in private, when

CIO CIO FORUM on **LinkedIn**

Link to more than **53,000** members of the CIO community.

The CIO Forum is where members of the CIO community can connect and collaborate to move their business technology initiatives and careers forward. If you are a senior IT professional, we'd love to have you join—apply for membership today.

Visit www.cio.com/linkedin



Q: Want to reach 140,000 readers?

A: Place your ad here



The Marketplace section of



For more information contact:

Enku Gubaie

508.766.5487

egubaie@idgenterprise.com



dtSearch®

The Smart Choice for Text Retrieval® since 1991

Instantly Search Terabytes of Text

25+ fielded and full-text search types

dtSearch's **own document filters** support "Office," PDF, HTML, XML, ZIP, emails (with nested attachments), and many other file types

Supports databases as well as static and dynamic websites

Highlights hits in all of the above

APIs for .NET, Java, C++, SQL, etc.

64-bit and 32-bit; Win and Linux

Ask about fully-functional evaluations
www.dtSearch.com 1-800-IT-FINDS

"lightning fast"
Redmond Magazine

"covers all data sources"
eWeek

"results in less than a second"
InfoWorld

hundreds more reviews
and developer case studies
at www.dtsearch.com

dtSearch products:

Desktop with Spider

Network with Spider

Publish (portable media)

Web with Spider

Engine for Win & .NET

Engine for Linux

Document filters also available
for separate licensing



SALES AND SERVICES

EXECUTIVE COMMITTEE

President & CEO
Michael Friedenberg
508-935-4274

Executive Assistant to the President & CEO
Pamela Carlson
508-935-4274

SVP of Human Resources
Patricia Chisholm
508-935-4734

SVP of Events
Ellen Daly
508-935-4273

SVP & Chief Content Officer
John Gallant
508-766-5426

SVP of Digital
Brian Glynn
508-935-4586

SVP of Strategic Programs & Custom Solutions Group
Charles Lee
508-935-4796

SVP, Group Publisher & CMO
Bob Melk
415-975-2685

SVP & General Manager, Online Operations
Gregg Pinsky
508-271-8013

SVP of DEMO
Neil Silverman
508-766-5463

SVP & COO
Matthew Smith
508-820-8102

**SVP & General Manager
CIO Executive Council**
Pam Stenson
508-935-4089

SVP of Digital, & Publisher
Sean Weglage
415-978-3314

**SALES
Publisher Emeritus**
Gary J. Beach
508-935-4202

VP & Publisher
Adam Dennison
508-935-4087

Sales Operations Manager
Christine McKay
508-988-7836

Senior Sales Operations Coordinator
Bethany Whiffin
508-935-4092

Sales Operations Coordinator
Megan Roman
508-820-8123

**EAST COAST
Account Director, Integrated**
Ellie St. Louis
201-634-2332

Account Coordinator
Alex Pierce
508-766-5345

**NEW ENGLAND/
CENTRAL
Account Director, Integrated**
Brian Keenan
847-508-8428

Account Coordinator
Stephanie Moran
508-935-4154

**WEST COAST
Regional Sales Director, Integrated**
Kevin Ebmeyer
415-975-2684

Account Coordinator
Stephanie Moran
508-935-4154

Account Director, Integrated
Al Collins
415-975-2686

Account Coordinator
Christine Hostetler
415-975-2583

**ONLINE SALES
Account Director, Digital, East Coast**
Richard Hartman
508-935-4487

Account Coordinator
Alex Pierce
508-766-5345

Account Directors, Digital, West Coast
Carmen Facas
415-975-2681

Account Coordinator
Lauren Eckenfelder
415-935-2687

Account Directors, Digital, West Coast
Erika Karr
415-978-3329

Account Coordinator
Christine Hostetler
415-975-2683

Director of Ad Operations & Project Management
Bill Rigby
508-820-8111

Director of Digital Account Services
Danielle Thorne
508-988-7969

Online Account Services Team Lead
Beverly Lloyd
508-988-6765

LIST SERVICES
Contact Stephen Tozeski
of IDG List Services at
508-766-5633
or stozeski@idglist.com.

CIO CONTACT INFORMATION

Editorial, Advertising and Business Offices: CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published monthly, with additional issues in May, June, September, October and November by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number PM40063731. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

Reprints & Permissions: For information about reprints and copyright permissions, please contact The YGS Group, 800-290-5460, ext. 100, cio@theygsgroup.com.

Reprints & Permissions: For information about reprints and copyright permissions, please contact The YGS Group, 800-290-5460, ext. 100, cio@theygsgroup.com.

Change of Address: Please go to <http://www.cio.com/subscription-services> and follow the online instructions, the online instructions.

LEGAL NOTICE

U.S. POSTAL SERVICE Statement of Ownership, Management and Circulation (Required by 39 U.S.C. 3685)

- Title of Publication: CIO
- Publication No.: 002-988
- Date of filing: September 5, 2013
- Frequency of issue: 12 issues annually with combo Dec/Jan
- Number of issues published annually: 12
- Annual subscription price: Free to qualified, US/Canada \$129.00, Foreign \$195
- Location of known office of publication: 492 Old Connecticut Path, PO Box 9208, Framingham, MA 01701-9208 (Middlesex-Central County).
- Location of the headquarters of general business offices of the publishers: CXO Media, 492 Old Connecticut Path, PO Box 9208, Framingham, MA 01701-9208 (Middlesex-Central County).
- Names and addresses of the publisher, editor and managing editor: VP & Publisher, Adam Dennison, CXO Media, 492 Old Connecticut Path, Framingham, MA 01701-9208. Editor-in-Chief, Maryfran Johnson, CXO Media, 492 Old Connecticut Path, Framingham, MA 01701-9208. Managing Editor, Kim S. Nash, CXO Media, 492 Old Connecticut Path, Framingham, MA 01701-9208.
- Owner: International Data Group, 1 Exeter Plaza, Boston, MA 02116-2851.
- Known bondholders, mortgages and other security holders owning or holding 1% or more of total amount of bonds, mortgages or other securities: International Data Group, 1 Exeter Plaza, Boston, MA 02116-2851. None
- For completion by nonprofit organizations authorized to mail at special rates: Not applicable.
- Publication Name: CIO
- Issue date for circulation data below: September 1, 2013.
- Extent and nature of circulation:

AVG. NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS

ACTUAL NO. COPIES OF SINGLE ISSUE PUBLISHED NEAREST TO FILING DATE

- | | | |
|--|---------|---------|
| A. Total number of copies printed (net press run) | 132,636 | 132,451 |
| B. Legitimate paid and/or requested distribution (by mail and outside the mail) | | |
| 1. Outside county Paid/Requested mail subscriptions stated on PS Form 3541 | 130,611 | 130,816 |
| 2. In-county paid/requested mail subscriptions stated on PS Form 3541 | 0 | 0 |
| 3. Sales through dealers and carriers, street vendors, counter sales, and other non-USPS paid distribution | 333 | 306 |
| 4. Requested copies distributed by other mail classes through the USPS | 0 | 0 |
| C. Total paid and/or requested circulation | 130,944 | 131,122 |
| D. Nonrequested distribution (by mail and outside the mail) | | |
| 1. Outside county nonrequested copies stated on PS form 3541 | 0 | 0 |
| 2. In-county nonrequested copies stated on form PS form 3541 | 0 | 0 |
| 3. Nonrequested copies distributed through the USPS by other classes of mail | 0 | 0 |
| 4. Nonrequested copies distributed outside the mail | 1,478 | 1,126 |
| E. Total nonrequested distribution (Sum of 15d (1), (2), (3) and (4)) | 1,478 | 1,126 |
| F. Total distribution (Sum of 15c and 15e) | 132,422 | 132,248 |
| G. Copies not distributed | 0 | 0 |
| H. Total (Sum of 15f and 15g) | 132,422 | 132,248 |
| I. Percent paid and/or requested circulation (15c/15f x 100) | 99.0% | 99.0% |

I certify that the statements made by me above are correct and complete.

Diane Turco

Diane Turco,
Circulation Manager

INDEX OF COMPANIES AND ADVERTISERS

Page numbers refer to the first page of the article(s) in which the company has a substantial mention. This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

COMPANY INDEX

AIT Laboratories 49
Alex and Ani 18
Altimeter Group 26
Apprio 36
Backupify 36
Bloomin Brands 50, 52
BPR-Rico Equipment 36
Center for Higher Education CIO Studies 28
Christiana Care Health System 56
Cisco 26
CompTIA 26
Delphi Automotive 22
Department of Veterans Affairs 36
Design by Educators 60
EMC 32
Enterprise Strategy Group 32, 36
Express Scripts 15
First Data 38
Fresh Diet 38
IMD 20
Intel 30
Kronos 36
Mansfield Oil 4, 40
Mastech 38

Metrolist 38
Modis 30
myMatrixx 16
Nasuni 36
Nestle 20
Ostriker von Simson 46
Rackspace 30
Schneider National 40
Sprinkl 24
Staples 16
Taneja Group 32
Verizon Enterprise Solutions 30
Virgin America 24
Wakefield Canada 50
Yum Restaurants International 54

ADVERTISER INDEX

American Public University 45
Avature 49
CareerBuilder 53
CenturyLink Business 19
CIO Executive Council Pathways 59
CIO Forum on LinkedIn 57
CIO Insider 48
CIO Marketplace 57
CIO Ones to Watch Call for Entries 44

ClickSoftware 5
Cytech Services 47
Datawatch 13
Dell SonicWALL 31
dtSearch 57
Hewlett-Packard Development Company, L.P. C1, 2, 43
IBM Corp. C3
iDashboards 55
iGate 41
Interactive Intelligence 29
InterSystems 35
NetApp C4
NTT Communications 17
NTT DATA Corp. 25
PCConnection 51
Pegasystems, Inc. 14
Samsung 21
SanDisk 9
ShoreTel 23
Time Warner Cable Business Class 7
Verint Systems, Inc. 27
Verizon 11
Vmware, Inc. 37
Windstream C2
Worksoft 33

Pathways

The Future-State of IT Leadership

Pathways was created for high-potential IT professionals headed toward CIO or other senior leadership positions. Developed with the real-world insights of our member CIOs, Pathways gives you the opportunity to chart your own course based on your unique development goals and career path.



Proven IT Leadership Development Designed and Led by Future-State CIOs

- » Chart your own path based on career aspirations and goals
- » Identify opportunities across known IT competencies
- » Learn from high-profile, experienced CIO mentors
- » Tailor participation within three areas of professional development
- » Utilize Boston University and Harvard Business Publishing courseware

Start Your Journey Today!

Visit: council.cio.com/pathways

Call: +1 508.766.5696

Email: cec_info@cio.com

Powered by



CIO Executive Council
Leaders Shaping the Future of Business





Making the Grade

For teachers, a long day in the classroom is often followed by hours of grading tests at home. To make the process go faster, some teachers whip out their iPhones. Using the Quick Key app, they scan in an answer key using the phone's camera, then scan each student's exam. The app scores each test, and teachers can view grades by student or by class for insights into which lessons stuck and which didn't. "If half of the students missed [question] three, you may need to refresh them on that...material," says Isaac Van Wesep, cofounder of Design by Educators, the startup that built the app. Scores can be exported to the school's databases and other grading programs. Quick Key, says Van Wesep, gives teachers the ability "to use data to teach, not just measure outcomes." The company plans to launch the program in Apple's App Store this fall, for \$5 per teacher per month.

—Lauren Brousell

Meet the game changer. Transform your IT infrastructure with IBM Flex System.

As IT moves from the back office to the center of driving business, technology needs to deliver faster results and be more innovative. It is time for a simpler, more open, flexible, and efficient infrastructure. It is time for IBM Flex System.[™]

IBM Flex System features an innovative chassis designed to support future generations of technology and provide your business with critical investment protection.

This first-of-its-kind¹ offering can help you save on power and cooling costs,² and can enable rapid SAN creation and management with optional integrated storage.

IBM Flex System Manager[™] lets you manage several hypervisors and all physical and virtual resources from one vantage point. With a no-compromise design that goes beyond blades, IBM Flex System, with the latest Intel[®] Xeon[®] processors, lets you take a more proactive approach to IT.



See how IBM enabled a leading IT service provider to transform their IT with IBM Flex System.

Download the case study at ibm.com/systems/beyondblades

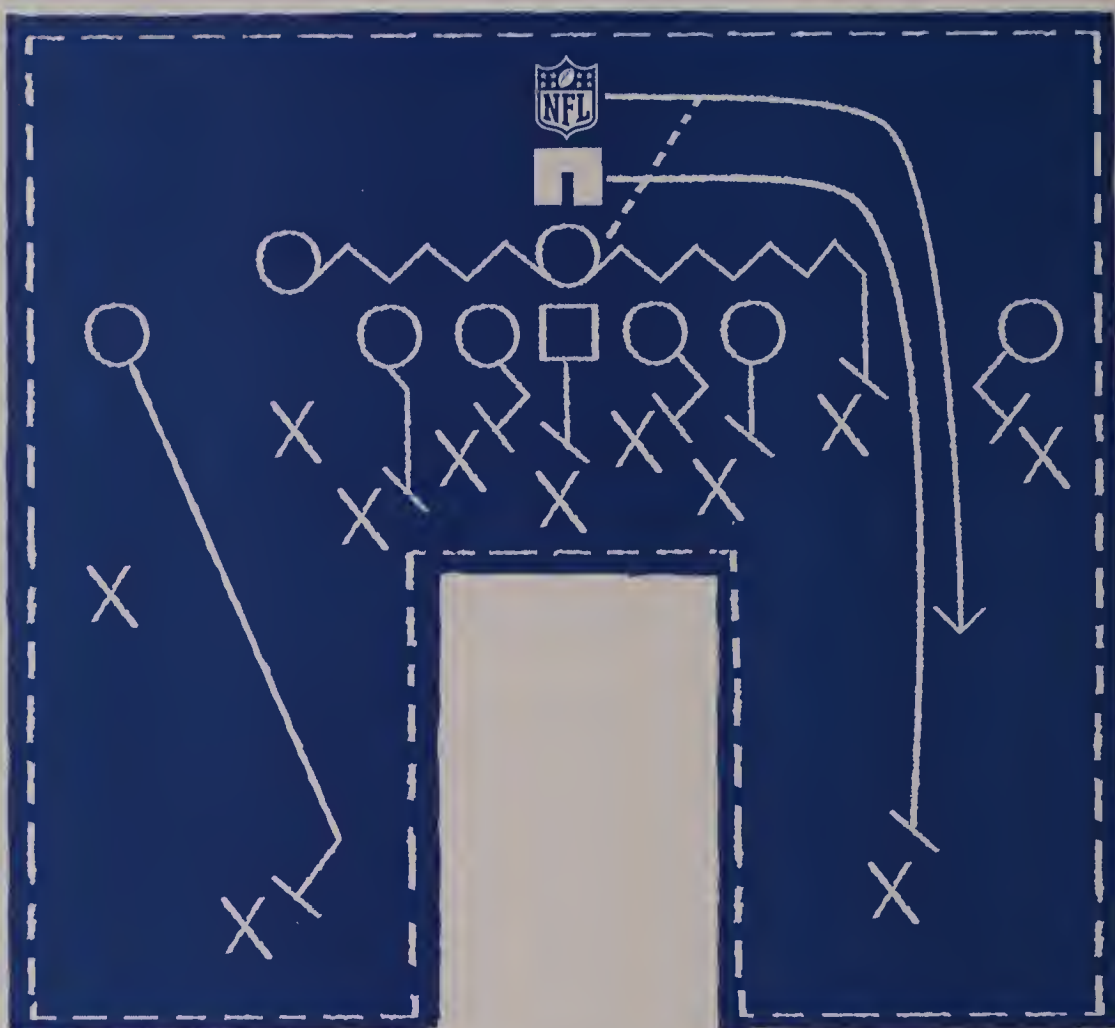
Or scan the QR code with your smartphone to learn more about IBM Flex System.



¹IBM Flex System is the first blade architecture to offer a single management tool for all physical resources and the first storage virtualization solution for internal and external storage.

²Power supplies are 80 PLUS Platinum certified; IBM internal testing showed low-voltage 1.35 V DDR3 memory RDIMMs consumed 11% less energy than 1.5 V DDR3 RDIMMs.

IBM, the IBM logo, IBM Flex System Manager and IBM Flex System are trademarks or registered trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. For a current list of IBM trademarks, see www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the U.S. and/or other countries. © International Business Machines Corporation 2013. All rights reserved.



The NFL runs on NetApp,
the world's #1 storage OS?

Yep, NetApp.

netapp.com/nfl
#NetAppNFL

The Official Data Storage Provider of the NFL

